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CONTENTS

THE MAN YOUNG AT FIFTY The Man Who Would Be Young at Fifty J. MADISON TAYLOR, M.D., Philadelphia. 157	THE DIAGNOSTIC LABORATORY 171	MISCELLANY Confidential Suggestion to Medical Authors 178 The Anchored Surgeons 178
GENERAL SCIENTIFIC Hernias of the Ovary, of the Fallopian Tube, and of the Ovary and Fallopian Tube 161 AIME PAUL HEINECK, M.D., Chicago. Medico-Legal Problems of the Drug Evil 164 CARLETON SIMON, M.D., New York. The Therapeutics of the Saratoga Effervescent Bath 166 GEORGE SCOTT TOWNE, M.D., Saratoga Springs. Uncle Sam's War Cripples Go to School Again 169 RICA BRENNER, New York.	PUBLIC HEALTH 173 EDITORIAL The Means of Retaining and Enhancing Vigor in Middle Age 175 Our Own Unsurpassed Spa 175 Anesthesia a Physician's Job 176 A Shrewd Diagnosis 176 As the Pressure Grows 176 Annual Registration of Physicians 177 On to Washington! 177 "We Shall Not Sleep" 177	COLONEL HENRY CLARKE COE, M.C. 178 CORRESPONDENCE 179 GYNECOLOGY AND OBSTETRICS 180 DIAGNOSIS AND TREATMENT 181 THE PHYSICIAN'S LIBRARY 182

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Medical Times

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The Man Young at Fifty

THE MAN WHO WOULD BE YOUNG AT FIFTY.

How Much Can a Man or Woman Do to Preserve Powers and Postpone the Inevitable Decline?

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Man, the Primate, head of the Animal Kingdom, endowed with reason, judgment, wisdom, while equipped by nature for yet higher degrees of vigor, endurance and longevity than any other genetic analogue, is, in fact to-day so far below his racial form that scientists are unable to depict precisely what he should exhibit under normal, much less under ideal, conditions.

This statement is a conservative, and should be a welcome one, since it plainly implies that just so soon as this primate makes full and judicious use of his endowments, he has it in him to reach such heights of individual and racial evolution as should place him on a parity with those symbolic beings pictured in ancient mythologies as demigods.

It may be that in the infancy of the race, from which faint echoes reach us through Biblical legends, there was some approach to the ideal make-up, since in one particular—survival values—we are told the years of life then ran into the hundreds. The poets, whose power of vision are conceded, have led us to believe that many things are, and were, possible beyond what we are willing to accept as actual or consider achievable.

Such promises are vague enough, it is true, but when trained anthropologists shall have given their undivided attention to this aspect of genetic resourcefulness, it is well within probability that we should make long strides toward attaining the golden age.

Why has this subject of bringing personal capabilities up to normal failed to engage greater attention?

Be the cause of this omission what it may, it is certainly a worthy quest. Let us consider what can readily be undertaken here and now to make a practical and promising start. The first step is to secure public attention to the worthwhileness of the enter-

prise, then to awaken popular interest in race conservation. From this primary vantage point there will readily emerge ways and means.

Is such an ideal race or nation realizable?

Five years ago I should have said no. To-day man is becoming so reconstituted, so purged and warned by the incendiarism of conscienceless self-seekers, by arrogant publicists and political criminals that the question of universal race betterment seems almost possible. It is possible to seize attention to practical phases of the subject, though it has been productive of small good as yet.

Two aspects of coefficients of efficiency might attract notice, and on these it is my intention to make some remarks.

1. The complete dependency of all forms of democratic governments upon the integrity (psycho-physical) of the unit—the citizen, the voter—in order to begin to visualize a sane collective opinion, and,

2. The enormous value of the mature adult, the elaborated human unit, the man or woman at the apex of vigor, sophistication and fruition.

With the former I have dealt elsewhere.

Where the Mature Individual Stands, or Can He Stand, in the Social and Economic Scheme.

Let us proceed at once with the practical question: Is the man of fifty capable of conspicuous or promising conservation, or reconstruction? If so, is it worth while, i.e., important enough to engage and also our professional energies?

The practical question at once comes up: Is the man or woman of fifty capable of conspicuous or remunerative conservation, construction or reconstruction? If so, is the initiation of campaign of endeavor warranted? And then, how shall they go about achieving results?

And first we should learn how much is known capable of serving as guides to energies, whereby we can proceed with confidence to formulate and elaborate procedures capable of meeting reasonable needs. A number of other pertinent queries arise which will be described later, among them these:

What the man or woman of fifty ought to be able to do any day or every day with his mental and physical make-up, which should continue to work without his being aware of what is going on in his

interior department; what he should be able to do at all times with safety and advantage, and retain energy, equipoise and efficiency. In short, the index of middle-aged energizing up to the point of stress. He may push himself in certain directions and degrees provided he is in possession of a reasonable assortment of his normal powers and limitations.

What the man of fifty should aim to do to keep his equipment in good condition, and without interfering with any ordinary occupation, any right or desirable method of life. The elements of behavior, reactions to emotion, of self-conduct, in short how to live a blameless life so far as one's health is concerned, that is—*conservative personal hygiene*.

What the man or woman of fifty should aim to do to raise his or her index of vigor, and to interfere little with any chosen purposes, habits or occupations. This means taking a few extra precautions and making some definite efforts to secure betterments well worth obtaining; i.e., *constructive personal hygiene*.

What the man of fifty should do in order to add materially to his mental and physical vigor; by careful revisions of conduct, of previous notions or habits (which may be erroneous), by improving points of view; in short, by means of constructive personal hygiene (and if handicapped by exhaustions or injuries or diseased states or their effects) by making himself over, viz: *reconstructive personal hygiene*.

What the man of fifty should be on the watch for as evidence of things going wrong in his interior department; i.e., *vigilant personal hygiene*. The earlier steps and marks of aging structures, how to recognize them, to appraise them, to make allowances for them, and then pursue a wise course to prevent extensive or rapid loss of vigor, to avoid perils from overdoing or underdoing, or from erroneous behavior (abnormal emotivation); and also to adopt measures for so modifying ideas, conduct, habits, etc., as to postpone as long as possible the disabilities of age; how to be always watchfully "on the job" lest he may lose his way and come to harm or grief.

He should learn to note without apprehension, but philosophically, the evidences of full maturity and early decline, the approach of changed feelings or conditions which must be accepted, and ascribed to the inevitable giving out of structures; in short, the inexorable recessional, normal decadence, in order to be on his guard against their needless increase or precipitancy, hence to fortify his judgment and behavior.

Thereupon follows the subject of auto-regulation, self-mastery, conscious control, taking up one realm, domain or field of endeavor, after another and soberly reflecting upon them.

The World War has so focussed attention on the value of manpower and man achievement that data, observations, scientific findings have accumulated as never before whereon to base calculations. To be sure the millions sent into the fighting lines were, as always, youths and adolescents, a selected group. Of these extremely few became leaders. The actual leading, organizing and planning was, as heretofore, done chiefly by mature, experienced, adequately trained personalities.

Among the dominant European personalities, the pivotal officers, directors and statesmen were men of fullest maturity, some of the most valuable of the sixth or seventh decade. There were also those men who made war possible, who constituted the pro-

ductive, the supply, the transportation and other concreted power. These again were many of middle age or beyond. In America, so eager are the authorities to make use chiefly of young men, efforts were made to discourage retention of mature men, irrespective of their proven capabilities.

Reflect upon the matter as one may, the plainer does it become that conservation and elaboration of the mature self outranks in importance that of the unformed, the inexperienced, the immatured or unelaborated personalities in positions where the quality of judgment is needed.

While we may deplore the abatement of variabilities, of enthusiasms, of adaptabilities in some over-mature or senescent personalities, made conspicuous by a show of slackness, insouciance or omission to appreciate the forcefulness of those who have kept life's lamps trimmed and brightly burning.

keep abreast of progress, we can only admire and

The spectacle of a fully developed mind and body enriched by experiences, judgments, victories, fruition achieved through long series of well-spent efforts to be and remain a force for good, cannot fail to impress, to win admiration, confidence, esteem and likewise the highest achievements.

Convincing evidence exists to the effect that the economic value of the man of middle life is vastly greater than the man of less mature mind; that the body then is of vastly more service for many purposes than even that of the younger one, and in particular that the quality, if not the quantity, of the output is superior, or, if that be challenged, he is better suited for important kinds of industries.

The reason why exceptions are taken to such like statements is that adequate care is by no means bestowed on expert conservation; enormous risks are run with full recognition of some, and total disregard of other perils.

Moreover, it is well established that age deteriorations of cellular, of structural and of functional competence are so capable of retardation, of limitation, that by judicious regulation of behavior energies can be readily maintained far beyond the point commonly experienced.

The enterprise can be undertaken at any age, though, of course, with better expectation the earlier it is initiated. When the present study was begun it was set aside for good reason. Since then evidence has accumulated so rapidly and richly as to prove startling. The war has concentrated attention on the paramount need for conserving the mature mind and the developed body for production behind the lines and equally during economic reconstruction.

For certain work only youth and early adulthood can be relied on, notably where dash, abandon, initiative is demanded, as in aviation. For certain other work, however, requiring judgment, deliberate, sound reasoning, such as medical and surgical, it has been by no means the callow youngsters who have usually rendered the best service. Where the performances of middle-aged men have been discredited it was just as likely to have been due to the environmental defects—acquired—as the chronologic or senescent.

However much a caviller might object to the above inferences, this much is plain:

No fair comparative tests have been made between the efficiency of the average youth and a group of judiciously and especially trained middle-aged men. It would be a most interesting and significant experiment to contrast a regiment of civilian experts

in some correlated line, e.g., emergency work, with an equal number of the mature military, e.g., the Legion d'Etrangeres.

The Dangerous Age.

Full maturity and early decline may be called with good reason the dangerous age.

The perils of this period include:

Impairments of sense perception and of organic structures; also in recovering equilibrium, in qualities of mobility; of pliancy; of elasticity; of prompt recovery from fatigue and exhaustion states; of circulatory tone or integrity; of respiratory capacity; of impairments in the aeration of the blood; of heat-making and heat loss; of genito-urinary functions and structures and in many of the body mechanisms. Mental peculiarities existing tend to become then exaggerated. Increased susceptibility is often shown to catarrhal processes; to overweight ("getting too large around the waistline"); to the effects of minor deformities; to posture (attitude) faults, and to malignancies.

Presenility or premature old age may set in; it may be a real (deteriorative) or fancied (psychopathic) disability. Latent constitutional faults or weaknesses are often manifested more prominently; also over-fatiguability, asthenic states, lowered energy tides. Climacteric or change of life occurs in both women (menopause) and also frequently in men (senile climacteric).

Temptations assail the overmature in new forms and degrees, the resultants of bad habits, some forms of impaired self-control and their effects, due to e.g., prodigal overactivities or inertness; to certain emotional overflows or oversusceptibilities, to fear thoughts of overweening self-confidence.

Sex impulses become altered in full maturity and often strangely influence behavior; e.g., forced eroticism or denials; overindulgence in food or drink, or in narcotics, "dope"; in tobacco; diverse false appetites or cravings, and the like volitional waverings may develop.

Veneral, uterine or prostatic diseases in men oftentimes result from these episodes, recrudescences of or abnormal sex cravings. Neglect of personal hygiene often becomes an evidence of middle-aged apathies; hence arise indiscretions in diet, usually over-indulgences in unsuitable foods, errors from overaction or overrest. Increased susceptibilities are likely to arise to climate or weather conditions; to heat or to cold; to dryness, to dampness, to altitudes. These demand correction.

Neglect of organs of special sense may lead to disorders and the effects of consequent diseases are precipitated by lowered functional balance, e.g., cataract, glaucoma, atrophic rhinitis, sinus or antrum disease, otitis media, etc. Neglect of teeth often leads to serious direct or remote disorders, especially from pyorrhoea and nonsensory or neglected dental abscesses. Also while some transmissible diseases are then less readily acquired, their effects, when they do arise, are often more serious.

Certain forms of disease commonly occur in early or late maturity which should be vigilantly watched for and guarded against, many of which can be avoided entirely, and others, when recognized in their incipency can be so limited or checked that their worst effects can be minimized or postponed.

Among these perils are:

Diseases of the heart, bloodvessels and kidneys; "Brights disease," apoplexy, heart tire, aquina, blad-

der troubles, prostatism, vertigo, etc. Respiratory capacity becomes lowered, thoracic structures grow rigid; hence aeration of the blood is made less complete.

Disorders arise from under or overaction of the ductless glands. Nervous stresses, delayed or deranged, or weakened nerve impulses induce psychoneuroses, psychopathies, anxiety psychoses and various forms of asthenia. Diseases of the digestive tract, and those due to faults of nutrition (faulty metabolism) which thus becomes destructive, e.g., goutiness, glycosuria, skin diseases, etc., cancer and malignancies.

Chronic diseases, often long in abeyance, which during maturity are liable to manifest themselves in pronounced forms, e.g., chronic appendicitis; chronic gall bladder disease; gastric ulcer; pancreatic disease, the effects of early displacement of the internal organs (enteroptosis), became exaggerated, also chronic disorders of the bones and joints.

Destructive agencies: Acts positive and negative, inducing perils capable of lowering the plane of efficiency, inducing deteriorative or disintegrative effects, through and by erroneous impulses or acts, or by a neglect of suitable precautions or by both.

Stresses and strains become more dangerous, of diverse kinds, degrees and significances, whether optional, compulsory, avoidable or inevitable, and their effects. Fatigue states—exhaustion states—effects of excitements, whether salutary or hurtful or destructive; e.g., ambitions, gambling, speed manias.

Ambitions, absorbing or incidental, praiseworthy, petty or absurd; social, financial, political, charitable or industrial; the influence of erroneous habits, of tastes on behavior and constitution, e.g., running for office in diversified organizations, in churches or in clubs, all the way from petty enterprises to federal office—the follies of a new and untried "career."

Excitements: The aphorism is forgotten to "drive your business, don't let your business drive you." The value of acquiring conscious control becomes paramount; significance of loss of poise in impulse and act; gambling "a short life and a merry one." Energy tides and their depletion; hence temptation to indulgence in tonics, stimulants, narcotics, "dope."

In short, few men or women, even the best of them, can be relied on, in even that most important enterprise to become and remain safe and sane self-commanders.

Self-Regulation as the Fine Art of Middle Age.

As corollary to the subjects mentioned, it now remains to outline some of the subheads. In the interests of perspective or completeness, it is helpful to glance now and then at a category (as at a table of contents) in order to be reminded of points familiar enough or those deserving of consideration for one's own guidance, or applicable to the conduct of a patient or client. This solicitous oversight is important when the face of the client has turned toward the long shadows.

No quality helps more in conservation or for repair than poise, "equanimity," serenity in both motivation and emotivation. For example, in dealing with the subject of *rest and work, weariness and recreation*, there is needed a nice balancing of energizing and restraint, of actuation and inhibition. This dynamic poise is one of the noblest of the fine arts, and deserves to be contrasted with one of the gravest of errors, *overdoing vs. underdoing*.

One major subject is seldom appraised as a fine art, however well it is practically or scientifically understood, and that is *exercise*, actuation, motor discharge, human energizing in the gross, bio-kinetics in the acts of daily life or for conservation, construction or reconstruction.

Here we have included the *constructive* theme of self-mastery, of conscious control from organized or systematized doings to the equally important not doings, the judicious use and disuse of voluntary parts. These should be plainly contrasted with *destructive* effects of hyperactuation, stresses passing into strains or exhaustions, and in particular the means whereby to modify impulse to do too much, or not to do enough, in order to preserve equipoise, cellular and structural integrity. Among the themes to consider are:

Systematized activities, movements, or exercises for the purpose of maintaining normality, designed to meet general or particularized needs, e.g., elasticity, pliancy and mobility of joints, oxygenation, metabolism, to overcome the disabilities of disuse, of disease, and of injuries. The key to success is precision, not prodigality in performance, a balancing of complete relaxation, graduated increments of force, to full tension or flexion in definite and normal directions. Next are:

Particularized movements, muscle training (myotherapy) as a special reconstructive measure, in order to reacquire functional poise, to release compressions, hence often to relieve sensory distresses, spasm, contracture, deformation, hence e.g., of the neck for headaches due to scalp adhesions, also for contraction, for tremor, etc.; to regain, restore and maintain original motor competence, such as any one may once have enjoyed and may once again enjoy in whole or in part, e.g., disuse crippings, faulty attitudes inducing hurtful effects on viscera and on vessels, rigidities impairing sense organs (ear), also loss of necessary agilities in crowded thoroughfares.

Among the objectives are: Reduction cures for overweight, the systematic and necessarily deliberate, carefully pursued movements for restitution of proportion and proficiency; also constructive by attitude and restoration of motor accessories and other digestive and respiratory disabilities.

As subdivisions of exercise we may consider plans for judicious activities or movements adapted for:

The healthy man or woman of ordinary activity.

The apathetic or sedentary person.

The brain worker.

The originally frail or the enfeebled, or the asthenic.

For the person of powerful make-up, heavy conformation, type of Percheron, or of carnivorous tendencies, who demands adequate action or must suffer definite forms and degrees of deterioration, especially when such a congeries of human dynamics is forced by accident, or stress of industry, into unsuitable or uncongenial occupations. Also for the normal person who has become weakened by disease, is convalescent, or handicapped by chronic disease or lameness or other disability.

In contrast to *actuation* is *inhibition*: rest, restraint, restitution, rehabilitation.

Vacations, choice of vacations, whether seasonal, annual or occasional, long or short; (a) partial, during the continuous, persistent and wearisome discharging of responsibilities, or (b) complete, radical and prolonged, months on end with complete changes

of scene and circumstance. Also brief rests and often, during the working day, or week ends, a few days at a time, either at home, near home, or by short trips away.

Judgment should be used in interpreting conditions demanding vacations, compelling or guiding choice, as to when, where to go and for how long; whether with one's family (which is a mere "transplanted group"), either isolated or in a radically changed environment, entourage, or alone with chosen companions (which last always does most good). Sometimes it is imperative to get utterly away from all familiar things and peoples, to cut free from shakling habits and hurtful restrictions.

For some individuals one form of vacation suffices, for others no benefit accrues whatsoever, only boredom and weariness. Then comes the question of environment, locality, climate, as influencing individual peculiarities, health or restorability.

A most significant factor in structural and functional balance is:

Occupation and suitable forms of diversion, relaxation, amusement, absorption of interest, hence of energy renewals and restitution.

The positions taken in relationship to occupation are divisible into two notable groups, those in which the participator is:

(a) A passive agent, spectator, auditor, critic or merely within the influence or atmosphere of the activities, hence while aware of, and affected by, what is going on about him or her, yet takes no active part in the doings, is a mere "looker on in Venice" (e.g., watching professional baseball); or becomes:

(b) An active participant, a player of the game, an energetic agent, or an actor, or doer, or competitor, one of those who "when Armageddon is on I must be there" (Rupert Brooke); one endowed with the urgings of chivalry.

Hence in categorizing the absorbing occupations, amusements, diversions, we should distinguish between those *active* and those *passive*, with due regard for alternations of each. Also the conditions which make for the greater desirability of one or other, as conditions vary; also the dangers which accrue from habit formation. Likewise we may distinguish between *outdoor* and *indoor* games or sports.

The appetite is growing for witnessing gladiatorial shows, competitions of athletes, baseball, cricket, raquets, prize fights, etc. Also races, horse, automobile, aviation, etc. All these may have merits, but are by no means comparable to participation unless too strenuously done. All tend to raise the index of glandular secretion which makes for energy training (adrenal, etc.).

In subsequent papers other points will be presented.

Rectal cancers may be divided into two large classes: (1) that class of cancers entirely or almost entirely explorable by rectal palpation, of which this method permits a perfect investigation because it determines their situation, and the degree of invasion, points which are sufficient to enable the surgeon to decide the course to follow. Rectoscopy is here only an accessory procedure which may be used when needed in certain cases, such as the removal of a fragment of tumor. The cancers which come within this category are cancers of the anal canal and cancers of the lower half of the rectal ampulla. (2) That class of cancers hardly accessible by rectal palpation, for which it gives only very incomplete indications, and for the investigation of which rectoscopy must be relied on. Such are cancers of the upper part of the rectal ampulla and cancers of the rectosigmoid region.—(Desmarest).

General Scientific

HERNIAS OF THE OVARY, OF THE FALLOPIAN TUBE, AND OF THE OVARY AND FALLOPIAN TUBE.

AIMÉ PAUL HEINECK, M.D.,

Chicago, Ill.

Hernia is a widespread disease. It occurs in both sexes and at all ages. The term hernia signifies the permanent or temporary protrusion of one or more viscera from their normal situation through a normal or abnormal opening in the walls of the cavity within which it is contained. It implies the combined existence of a hernial ring, hernial sac, hernial sac-contents and hernial sac coverings. In the female, the frequency of external hernias has been and is still underestimated. We will only consider external hernias, hernias whose outermost overlying sacculus covering is skin, and which, after reaching a certain stage of development, give rise to a more or less visible and palpable external swelling in the ischiatic, obturator, ventral, femoral, inguinal or other region, depending upon the anatomical location of the hernia.

I wish to formulate some conclusions based upon quite an extensive study of the literature and also upon my clinical experience, concerning that type of external hernias in which the hernial sac content is either the Fallopian tube, the ovary or the Fallopian tube and ovary, alone or in association with some other abdominal viscus or viscera.

The escape of the uterine appendages from their normal situation may take place through any of the weak spots or openings of the lower abdominal or andomino-pelvic cavities. A hernia originating either in the internal or in the external inguinal fossa and escaping above Poupart's ligament, is an inguinal hernia; if it escapes beneath the same ligament, and emerges through the crural canal and the saphenous opening, it is a femoral hernia; if through the obturator canal, an obturator hernia; if along the course of the gluteal or sciatic nerves and vessels, emerging almost always above, very infrequently below the pyriformis muscle, very rarely through the lesser sacrosciatic foramen, a gluteal hernia; if through an operative scar in the abdominal wall, a post-operative hernia.

The classifying of hernias into congenital and acquired is, at times, misleading. Many hernias are congenital in the truest sense of the word; they are complete at birth, hernial ring, hernial sac and hernial sac-contents all being present. In others of the so-called congenital hernias, the sac only is existent at birth; in an acquired hernia, the sac is always of post-natal development, and is entirely derived from the parietal peritoneum, hernias "par glissement" excepted. Congenital hernial sacs result from non or incomplete closure of peritoneal processes normally present in the foetus, such as the processes vaginalis peritonei in the male, the canal of Nuck in the female, etc. These hernias may exist alone or in association with one or more other hernias of similar or dissimilar anatomical types, of similar or dissimilar clinical characteristics. Congenital hernias may appear at any period of life.

Orifices for the transmission of vessels and ducts are normally present in the muscular and aponeurotic layers of the abdominal walls. An acquired hernia is formed by the gradual or sudden escape through

these orifices, pathologically widened, of a viscus or viscera normally contained within the abdominal cavity; the viscera in their passage through and beyond the abdominal wall create paths of escape for themselves by bulging and pushing forward the parietal peritoneum.

Conclusions.

1. The Fallopian tube, the ovary, or the tube and ovary, in part or in their entirety, may be herniated. Degree may vary from a complete descent into a hernial sac, of the tube, ovary, or tube and ovary, to a condition where the herniated viscus or viscera lie just without the abdominal ring. The herniated organ or organs may be normal, may present degenerative changes of an atrophic, inflammatory or neoplastic nature.

2. Hernias of the uterine adnexa are often overlooked, not uncommonly misdiagnosed and therefore subjected to injudicious treatment, harmful alike to the hernial contents and to the individual, prejudicial alike to the patient's general well-being and to her reproductive capacity.

3. The herniated tube, ovary, or tube and ovary may be the sole content of a hernial sac or there may be present as associated hernial contents, one, two or more of the following structures or organs: Meckel's diverticulum, appendix vermiformis, omentum, urinary bladder, small or large intestine, rudimentary or fully developed uterus.

4. Tubal, ovarian, and tubo-ovarian hernias are congenital or acquired, unilateral or bilateral. If in the female, an inguinal hernia first appear late in life, it is difficult to state with absolute accuracy that an incompletely obliterated canal of Nuck did not predispose to its occurrence. These hernias may exist alone or are present with one or more other hernias of similar or dissimilar anatomical type, of similar or dissimilar clinical characteristics.

5. In a small proportion of cases these hernias co-exist with malformations, underdevelopment or absence of other internal or of some external genitalia. In Rabinovitz' case of double ovarian inguinal hernia there was demonstrated at operation an absence of the uterus and a rudimentary vagina (*Am. Jour. of Obstetrics*, 1915, Vol. 71, p. 804).

6. In individuals having a herniated tube, a herniated ovary, or a herniated tube and ovary, pathological states of other internal genitalia or of some external genitalia may be present: Vaginitis, ovarian cystoma, uterine fibroid, uterine prolapse and other uterine displacements, etc.

7. Tubal ovarian or tubo-ovarian hernias may co-exist with pathological states of organs other than the internal or external genitalia: Chronic hydrocephalus, multiple stenosis of intestines, hydronephrosis, etc.; those co-existing pathological states not having any relation of cause or effect to the hernial infirmity.

8. Congenital or acquired hernias of the tube, ovary, or tube and ovary, may become manifest at any period or life. Petit de la Villeon operated successfully a four months old baby for an inguinal hernia of the ovary, fimbriated extremity and body of tube (*J. A. med de Bordeaux*, 1913, Vol. 43, p. 644). These hernias have been observed in nulliparae, primiparae, and in multiparae. No age is exempt. No race is immune. As hernias by their complications shorten life duration, the number of hernia bearing individuals that reach an advanced age is small as compared to that of the non-herniated.

9. Hernias of the uterine appendages are designated according to their anatomical site, as post-operative, ventral, gluteal, sciatic or ischiadic, obturator, femoral or inguinal. Statistics show that inguinal tubal, ovarian or tubo-ovarian hernias are eight times as common as all the other anatomical varieties of these hernias.

10. Clinically, these hernias are said to be reducible, irreducible, non-inflamed, inflamed, strangulated, or their pedicle may be the seat of torsion. This classification is based upon the state of the hernial contents or upon their relation to one another or to the sac. When the contents of a hernial sac cannot in their entirety be manipulated back into the abdominal cavity, the hernia is said to be irreducible, provided that there is not any or but a very slight interference with the blood supply of the herniated organ or organs and that there is no disturbance of function. If irreducibility and both functions and circulatory disturbances are present, the hernia is designated as strangulated.

11. Torsion of the pedicle of a herniated ovary or of a herniated tube and ovary, a not infrequent accident peculiar to hernias of the uterine appendages, presents the same clinical symptoms and determines in the sac-contents the same anatomical changes as are observed in the strangulated hernias of the uterine appendages. All the reported cases of torsion of the pedicle of a herniated ovary or herniated tube and ovary were irreducible hernias, congenital in type, inguinal in location.

12. Tubal, ovarian and tubo-ovarian inguinal hernias are recent, old, or recurrent; are direct, interstitial or intra-parietal, indirect or oblique. If indirect or oblique, they are either complete or incomplete. A few sliding hernias are on record.

13. All the bilateral, tubal, ovarian, or tubo-ovarian hernias recorded in medical literature of the last twenty years are of the inguinal variety. The bilaterality may date from birth; may be acquired. In bilateral hernias, both hernias may or may not show the same degree of development; they may have appeared simultaneously or one may have appeared a shorter or longer time before the other. They may show similar or dissimilar clinical characteristics. When bilateral, one hernia may be irreducible and the other reducible.

14. All the femoral tubal, ovarian or tubo-ovarian hernias recorded in the medical literature of the last twenty years were of the acquired type and appeared in advanced adult life. "Femoral hernia is essentially a hernia of adult life."

15. Hernias of the uterine appendages, in the absence of anomalies of the non-herniated internal genitalia or of the external genitalia, do not if the herniated adnexa be of normal development, free from disease and reducible, prevent conception, interfere with gestation, nor unfavorably influence parturition. Pregnancy can occur previous to, during and subsequent to, the existence of hernias of this nature. Devane reports a case of femoral hernia of the oviduct presenting the following points of interest: Presence of the Fallopian tube in a femoral hernia at the fifth month of pregnancy; tube excised; no interruption of pregnancy. The excision of the tube has apparently not interfered with subsequent conception, as the patient has since given birth to two full-term children (*Lancet*, 1916, Vol. 2, p. 805).

16. The etiology of hernias of the uterine appendages is that of hernia in general. As main factors should be cited:

1. All conditions associated with or allowing an increased mobility of the uterine appendages:
 - (a) Lengthening of the broad ligaments consecutive to repeated pregnancies.
 - (b) Pathological relaxation of the ligaments due to puerperal subinvolution.
 - (c) Abnormal length of the broad, ovarian and infundibulo-pelvic ligaments.
2. All conditions that tend to increase the intra-abdominal pressure:
 - (a) Sudden increase of the intra-abdominal pressure leads to hernia formation by overcoming the resistance offered by one or another of the weak points of the abdominal wall. Sudden increase of the intra-abdominal pressure may lead to the irruption of a tube, ovary, or tube and ovary in the sac of an old enterocele.
 - (b) Occupations that call for repeated muscular efforts associated with increased intra-abdominal tension, as the lifting or pushing of heavy weights, etc.
 - (c) Physiological or pathological states distending the abdominal cavity, stretching the abdominal parietes, and widening the orifices normally present in the muscular and aponeurotic layers of the abdominal wall. Enteroptosis, obesity, abdominal tumors, ascites, pregnancy, etc., can be regarded as predisposing to hernia production. Hernias are of far more common occurrence in women who have borne children than in those who have remained sterile. Gestation acts in various ways. As it progresses, the position of the internal genitalia is changed and uterus, tubes and ovaries ascend above the pelvic strait. Pregnancy increases the mobility of the uterine appendages; distends, weakens and attenuates the abdominal parietes; it stretches, widens and dilates the hernial orifices and abnormally lengthens the broad ligament. Gestation further predisposes to hernia formation by loosening the subperitoneal connective tissue, relaxing the mesenteric and other means of visceral fixation and altering the intra-abdominal capacity. The expulsion efforts of delivery can exert an undeniable etiological influence on hernia formation.
3. All conditions which weaken the abdominal wall. A hernia can occur wherever the parietal peritoneum is not sufficiently supported by the transversalis fascia and the other structures of the abdominal wall:
 - (a) Acute or chronic diseases debilitating the organism, especially such as cause great emaciation.
 - (b) Obesity weakens the abdominal wall and increases the intra-abdominal pressure. The fat present in the abdominal wall, in the omental, mesenteric and other peritoneal folds explains why obesity plays such a role in hernia development.
 - (c) Traumatism. Most often the traumatism does not cause the hernia, but only reveals its existence. Among traumatisms must be mentioned abdominal operations and their sequelae. Pathological adhesions of viscera or omentum to the anterior parietal peritoneal wall near a hernia opening may act as a predisposing cause.

(d) Enteroceles, epiploceles and entero-epiploceles.

(e) Feeble development of atrophy of the aponeurosis of the transversalis muscle, and of the conjoined tendon. This factor is an important one in direct inguinal hernia.

(f) Congenital anatomical defects facilitating tubal, ovarian or tubo-ovarian displacement.

17. The herniated organ or organs may be bound to the sac-wall or to each other; may be the seat of congestion, gangrene hemorrhage, inflammation, suppuration, tuberculosis (primary or secondary), cystic and neoplastic disease (benign or malignant).

18. The herniated organ may be the seat of gestation.

19. The hernial sac and the herniated adnexa may be the seat of an inflammation, suppurative or other in character, which, owing to progression by continuity of surface, has extended upward from the vagina, presenting the following progressive anatomical picture: Vaginitis, endocervicitis, endometritis, salpingitis or pyosalpinx, ovaritis and saccular peritonitis.

20. The hernial sac and the herniated contents may be the seat of an inflammation, suppurative or other in character, which originating in the vagina or in the uterus has reached the tube and ovary by way of the parametrial and parasalpingeal connective tissue.

21. Pathological processes originating in the hernial contents may, owing to extension by contiguity of tissue, involve the sac and its overlying tissues, and conversely, pathological processes, primarily involving the sac or the overlying tissues, can spread to the hernial contents.

22. The hernial sac and the herniated tube, ovary or tube and ovary can become the seat of an inflammatory or other pathological process originating in the associated hernial contents, epiploitis, appendicitis, gangrenous gut, etc., infection spreading by contiguity of surfaces.

23. The herniated tube, ovary, or tube and ovary, and the associated hernial contents may be free of disease or the uterine adnexa may be normal and pathological changes be present in the associated hernial contents: appendicitis, gangrenous gut, epiploitis, etc.

24. The associated hernial contents may be normal and the herniated uterine adnexa be the seat of morbid changes.

25. It is at times difficult, at times impossible, to determine whether the anatomical changes present in the herniated organ or organs, developed previous to or subsequent to the displacement of the tube, ovary, or the tube and ovary into the hernial sac.

26. Truss treatment for hernia of the uterine appendages is not curative, is often productive of discomfort, and not infrequently interferes with the nutrition and development of the herniated tube or ovary.

27. Women who suffer from any form of hernia should be carefully watched before, during and after their confinement, so as to prevent or rather minimize any undue strain upon weak regions of the abdominal wall. These women, at the close of lactation or towards the end of the first year following their confinement, should, in the absence of contraindications, be subjected to an operation for radical cure of the hernia.

28. After the second year of life, spontaneous cure of hernias of the uterine adnexa is rare and can

occur only if the hernial contents are easily reduced and easily kept reduced.

29. In the female all hernias irrespective of anatomical site, of clinical condition, or of nature of contents should, in the absence of a constitutional state contra-indicating operations of election, be subjected to an operation for radical cure.

30. We advise that all adnexa hernias, irrespective of the patient's age, irrespective of anatomical site or of size, be subjected to an operation for radical cure:

(a) If the hernia be irreducible.

(b) If the hernia be strangulated.

(c) If the pedicle of the herniated organ or organs be the seat of torsion.

After the age of two years:

(d) If the hernia be bilateral.

(e) If other hernias be co-existent.

(f) When the hernia cannot be painlessly, completely and permanently kept reduced.

(g) If organs other than the uterine appendages be also present in the same hernial sac.

(h) If the wearing of a hernial ring truss causes pain or aggravates the symptoms.

(i) If the patient has to be subjected to ether, chloroform or other general surgical anesthesia for the performance of an operation of election, double advantage can be taken of this anesthesia, and an operation for the radical cure of the hernia performed.

(j) If patient is exposed to pregnancy.

31. Clinical conditions so closely simulating hernia of the uterine appendages that a positive diagnosis without operation appears impossible, should be subjected to operative treatment. Only benefit can be derived from adherence to this rule. A diagnosis is established, and a cure is effected.

32. In hernias of the uterine appendages, as in all other hernias, the ideal time for operation is previous to the development of degenerative or other pathological states in the herniated organ or organs, and previous to the occurrence of any of the various complications incident to hernias. Early operations give the most satisfactory results.

33. The mortality of operations for the radical cure of hernias, if performed at an opportune time and by a rapid operator, competently assisted, is practically nil.

34. To be effective, operations for radical cure of hernias must well fulfil two essentials: The suppression of the sac and the strengthening of the area of the wall through which the hernia has escaped. In all herniotomies, the sac should be incised and the hernial contents examined. In the female, the inguinal rings are comparatively small. They can, without inconvenience to the patient, be closed.

35. Important operative points:

(a) Always wear and have the assistants wear rubber gloves.

(b) All ligatures and irremovable buried sutures should be of absorbable material.

(c) In inguinal hernias always divide the aponeurosis of the external oblique muscle to an extent sufficient to give a good exposure of the inguinal canal and of its contents. In the female, the inguinal canal in its normal state and after an inguinal hernia operation, in its restored state, should, outside of a few arterioles and nerve filaments, contain nothing but

the round ligament, a structure much smaller than the spermatic cord. This round ligament comes from the muscular structure of the uterus; it finally becomes lost in the labium majus. In a hernia operation, the round ligament, if not the seat of disease, should never be sacrificed.

- (d) Always make a high and careful dissection of the hernial sac from the surrounding tissues, and especially from the round ligament to which it is often quite intimately adherent.
 - (e) Always open the sac and determine by direct inspection and, if necessary, by palpation, the nature and state of the hernial contents.
 - (f) After reduction or ablation of the hernial contents, the sac is to be transfixed and ligated as high as possible. Sac is then removed flush with the peritoneal cavity. This high and thorough removal of the sac is most important. Many operators fix the hernial sac-stump to the abdominal wall, immediately above the hernial ring.
 - (g) Never sacrifice the round ligament; it is harmful to the statics of the uterus. Never transplant the round ligament; it is unnecessary. No drainage. After operation, no truss should be worn; a truss does not support the scar; it weakens it.
36. It is unwise to sacrifice the normal herniated tube or ovary. These organs have an important role and in the absence of marked structural impairment should be returned to the abdominal cavity. Their removal is a mutilation.
37. The tube or ovary when herniated will be removed, if it or they be the seat of:
- (a) Impending or actual gangrene.
 - (b) Benign neoplastic disease.
 - (c) Malignant neoplastic disease.
 - (d) Voluminous cyst formation (unilocular or multilocular).
 - (e) Malformation or incomplete development.
 - (f) Suppurative inflammation.
 - (g) Hematoma or interstitial ovarian hemorrhage.
 - (h) Seat of tubal gestation, previous or subsequent to rupture of foetal sac.
 - (i) Tuberculosis, limited to or extending beyond the herniated organ.
 - (j) Distortion beyond recognition.
 - (k) Such pathological changes as prevent function (hydrosalpinx).
38. Until we are better informed as to the frequency and nature of true and false hermaphroditism, removed herniated uterine adnexa not having a distinctive structure should be subjected to a microscopical examination. This will avoid mistaking testicular for ovarian tissue and vice versa.
39. In the treatment of strangulated sciatic or gluteal, obturator and femoral hernias of the uterine appendages in which the hernial sac also contains gangrenous gut, a double operation is almost always indicated; a laparotomy for the repair of the intestinal lesions, and a herniotomy for the radical cure of the hernia.
40. The herniated tube, ovary, or tube and ovary can be removed through the usual herniotomy incisions. The operative steps for the removal of these herniated organs correspond, short of a laparotomy, to the technique ordinarily used in salpingectomy, varietomy and oophorectomy.

MEDICO-LEGAL PROBLEMS OF THE DRUG EVIL.

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With the advent of prohibition, the habit-forming drug evil is assuming greater proportions. That this is recognized by those who have the welfare of the people at heart is evidenced by the preparations that the city, state and federal authorities are making to restrict its use and to combat its spread.

It is obvious to anyone that the great mass of our population have accustomed themselves to alcohol stimulation. Many of these will be indifferent that the state has ordained "thou shalt not." Others will feel the loss of their customary stimulation, whose effects they know so well, and which was a solace to them in their moments of depression.

Again, there will be a very large number who have depended upon alcohol for its effect as a tonic to the nervous system and who will turn in every direction when they are deprived of it to something that will replace it, and therein lies a grave danger.

The assertion made by numerous writers that the increasing use of habit-forming drugs is a menace to our population is real and serious, and must not be underestimated.

Men who have taken alcohol in moderation for years in the form of beer, wine or whiskey, without producing a habit or weakening their intellect will not be able to substitute narcotic drugs without becoming hopeless addicts.

An individual, while intoxicated by alcohol, is readily recognized as intoxicated, for his speech is incoherent and his muscular movement incoordinated. His mental state does not react to the illogical and insane delusions as does that of the drug taker.

A man who is intoxicated gives evidence of his condition to any casual observer, but one who is under the influence of cocaine or an opium derivative may disguise his condition from the most expert observer, and his general appearance will not give warning or evidence of his insane activity.

As a result of this condition many acts of criminal violence will confront and baffle the police of this city. In addition to this there will not only be the added difficult task of the detection of those guilty in vending and trafficking drugs and the breaking up of various vicious drug clubs and circles, but the police will face in the prosecution of these drug victims new medico-legal questions that are startling as to the various aspects of responsibility of crime committed while under the influence of such drug. These medico-legal aspects differ largely from those involved in intoxication from alcohol, because of the absolute moral irresponsibility of the drug addict.

Because of the present danger of the drug evil and the consequent greater increase of crime, because the police and the judiciary will confront a number of important problems, involving the sanity and responsibility of such drug fiends, while under the influence of drugs, a general survey of the relation of crime and insanity and the law pertaining to such acts is timely.

Modern scientific study of the mind has demon-

strated that the status of certain accepted mental conditions has not been sufficiently recognized by the law. These involve questions of mental alienism as applied to crime, to which at times insanity seems closely akin.

In a vast number of important medico-legal cases the alienists upon both sides have obscured various questions of alienation and brought a great deal of discredit upon expert evidence by differing upon questions of nosology, whereas both would have agreed had their deductions and conclusions been based purely upon psychological pathology. This involves chiefly the activities of the moral and reasoning faculties in their relation to each other. Thus many students of the mind devote too much attention to delusions, to hallucinations and to illusional diagnosis and lose sight of the psychological attitude of the suspected individual, or the relation of the moral and reasoning faculties to each other.

A hindrance to the advancement of forensic medicine has been due to the mystification with which various alienists have cloaked the entire subject of insanity as applied to crime and have chosen to view insane criminal acts from the viewpoint of nosology which have not stood the tests of psychological inquisition advanced by the legal mind.

A few brief and elementary psychological guides will assist and simplify this perplexing subject so that the jurist may view the mind as having various parts and a variety of functions, and not be lost in a maze of medical nomenclature.

When thought filters through a mass of brain cells, then mentality is born. When this separates into distinct faculties, through various stages of development and activities, then mentality becomes mind. In the human mind the reasoning ability becomes pronounced, enabling the individual to study cause and effect and to profit from this knowledge. The moral faculties are the mind's crowning jewels, for their healthy application represents the control of the impulses, emotions and desires, obedience to demand of personal behavior and duties to fellow man. In this way the moral faculties direct reason to the greater heights of ethical conduct, and, in fact, act as a balance to all mental activity.

Time has established a standard or average reasoning ability in man and by this measure we recognize the idiot or the philosopher. When an individual differs decidedly in the normal reasoning ability established by precedent, we are apt to think him queer or certainly unusual. When a man suddenly changes his habits without any undue specific cause warranting it, and which is contrary to his own previous behavior and which does not permit of any other possible feasible explanation, and which change involves mental disturbances, he is considered insane. Insanity is really the destruction of the ego, or it may be loss of mental and moral equilibrium.

If a man gives as proof of disordered moral and reasoning ability the destruction of life, property and social laws, and such destruction has no motive for its perpetration, the law holds him insane. It becomes a question of law of motive, and it is largely this element, necessary to general reasoning ability, that stamps the act as either the result of insanity or crime. Still, an insane act may exist in which motive may be present. In the insane, however, the act occurs from an impulse without material advantage to the act of will. It is the

selection of the act as well as the evidence of defective reasoning that stamps it as the choice of an insane mind. In the criminal the impulse may arise from the same cause, but the reason is not defective in its general application except as to legal soundness. The legal tests of responsibility of criminal acts are generally involved in the question, "Did the individual recognize what he was doing, and, if so, did he know it was wrong?"

Now, a pyromaniac knows that he is setting a house on fire and knows that it is wrong, as many other insane individuals commit acts that they know are wrong ethically and legally, but they are actuated by an insane impulse. This impulse the law does not recognize as exculpatory, and yet such impulses, uncontrollable in character, may arise not from a natural passion, but from an insane mental state. There has been no provision made in law for mental conditions termed "imperative conception," though our increased knowledge of the mind offers proof that these cases are not criminal acts but insane ones.

Everyone, by abnormal activity of the lower order of mental faculties, productive in desires, impulses and emotions, would at times be a criminal, did not the higher impulses of morality and reason admonish and guard against it. A stratum of crime and also of insanity underlies every human mind.

It is common knowledge that a delusion may affect both an insane and a sane mind, but the determining factor is the degree with which the will is influenced to commit a specific act. The delusions of the insane control the will of the individual and take away the freedom of moral action.

If a man is suffering from a delusion, so that he cannot control his will, his intellect or his acts, then such an individual must come under the classification of insane. There is, however, a sharp line of demarcation between unrestricted vice and moral degeneration.

Should the higher faculties of morality and reason be irresponsive, deflected or perverted and the individual have no control over his impulses and desires, he is obviously irresponsible for his acts.

It is hardly conceivable that a jury should be charged by a judge to consider a man as guilty who commits an act of crime while under the influence of a drug, as it would adjudge the act of a man who is in full possession of his reflective mind and memory. No one can judge a man as to his motives and intentions when he is unconscious of his acts by reason of delirium.

Whether this is permanent or temporary is a question that does not enter into the argument. Should a man qualify himself or prepare himself for the crime by taking drugs, such a man is guilty; but if the act was committed without previous conception prior to taking the drug, but was the result of such delusions and that he did not know the nature of his act or that it was wrong, then such a man cannot be viewed as guilty of a criminal act, but as rather guilty of an insane act.

It can be readily perceived that the question of insanity will be a defense which may be righteously advanced in many drug addict cases. Without a thorough knowledge of psychological pathology these cases will tax the conscience of many a judicial mind in the administration of justice.

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THE THERAPEUTICS OF THE SARATOGA EFFERVESCENT BATH.

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Water as a therapeutic agent derives its varied powers from its remarkable flexibility of administration. It is applied as a solid, a liquid, and as a vapor; it is used in its natural state either hot or cold, pure or highly mineralized; free from gas or more or less charged with carbon dioxide or sulphur dioxide; it may be applied in pools, tubs, jets, or sprays, and with or without pressure; in the quiet of the sick room or in the boisterous surf of the ocean. This capacity for infinite gradation, and its almost unbounded applicability to various pathologic states, justifies the claim, made with growing insistence, that the use of water commands the first place in modern therapeutics.

The genealogy of hydrotherapy reaches through ages of empiricism to the great minds which gave medicine its earlier start—to Hippocrates, Galen, Celsus, Aretæus, Musa, Paulus Ægineta, and Arabasius. The Roman baths were one of the great features of that great empire, and were established in its most distant possessions. During the year 1909, in the ancient town of Bath, in England, there was a restoration of the Roman bath as it existed in the time of the Caesars. The baths of Rome became so sumptuous, and entailed such extravagance, that they eventually lost their hygienic features, and contributed to the decay of the Roman character and bodily vigor, so that in the dark ages that followed, the nobler uses of water were neglected. Only within the last two hundred years has light begun to reappear, and only within the last fifty years has a scientific system of hydrotherapy been evolved.

In 1859 Beneke first recommended to the medical profession the use of the mineral bath as influencing favorably various circulatory conditions. His recommendation did not succeed in popularizing this form of treatment and it was not until after the work of August Schott, in 1880, that the mineral bath treatment can be said to have developed into a recognized system.

Since the time of Schott these baths have undergone very much the same sort of evolution that most other forms of treatment have undergone. Originally designed for the treatment of certain forms of cardiovascular disease only, they have come in time to be used by many physicians as a method of treatment supposedly applicable to almost any and every form of disease of the cardiovascular system. As a result of the failure of so many physicians, not only in Germany, but in all countries of Europe, and even in America, to develop precise indications for the use of these baths, and to limit the cases sent to Nauheim to patients appropriately belonging there, Nauheim came to be, in the minds of both laymen and many physicians alike, a word to conjure with. It cannot be denied that enormous numbers of cases utterly unsuited to treatment by baths of any kind have been sent to Nauheim and similar resorts. Patients with broken compensation of high degree have been made to incur great fatigue and expense to make the trip to one or other of these spas when they were utterly unfitted to be moved from their own homes. To such an extent has this highly regrettable condition of affairs developed that the natural mineral bath treatment has, in the minds of many, come to be looked upon as a sort of last resort to which any case may be appropriately subjected when it has failed to respond to every other form of treatment. The natural outcome of this

state of affairs is, and must necessarily be, the equally one-sided condemnation of the whole method. Unfortunately, in spite of the favorable action of these baths in suitable cases, their precise method of physiological action was unknown, or imperfectly known, until within a decade, and so we find, what, under the circumstances, could only be expected, different groups of physicians holding radically different views as to the action and indications for their use.

Our experience, in Saratoga Springs, with the use of the Saratoga mineral bath, is limited to four years. During this time many thousands of baths were administered, and from this experience we have been able to draw some deductions upon the subject of the therapeutics of the carbonic-acid-gas bath which may be interesting.

First I want to present, for your consideration, the scheme of Ottfried Müller (which we have been following in Saratoga Springs), who presented the first exact experiments which led to anything like satisfactory conclusions regarding the action on the circulation of various hydrotherapeutic procedures. Müller's experiments were first published in the Medical Clinic at Leipzig, in 1902. The conclusions at which Müller arrives are as follows: Baths with the water at a temperature below the indifferent zone 33-35° C. (91.4-95.0 F.) produce an increased blood-pressure, lasting throughout the bath, with a decrease in the pulse rate. 2. Baths with the water at a temperature above the indifferent zone to approximately 40 degrees C. (104 degrees F.) produce, after a short initial rise, a lowering of the blood-pressure to or below the normal; this lowering is then followed by a second increase in the pressure. Below 37 degrees C. (98.6 degrees F.) in this group of baths, the pulse rate is lowered, above this point it is increased. 3. Baths over 40 degrees C. (104.0 degrees F.) produce an increase in pressure, lasting throughout the entire bath, with an increase of the pulse rate.

In the hot baths the increase of the blood-pressure and bodily temperature occur simultaneously.

4. In the artificial Nauheim baths the increase in blood pressure is determined in greater degree by the temperature of the water than by the CO₂ content of the bath. These two factors play an approximately equal rôle in the production of the changes in the pulse rate.

Hinsdale makes the emphatic statement that one of the most important effects of the CO₂ bath is a shrinkage in the area of the cardiac dullness and a slight upward movement of the apex. He fortifies this statement with the reports of radiographic study showing that there is a distinct lessening of the volume of the heart. The duration of the diminution in size is very short, but the continued employment of the method produces permanent results. The greatest benefits are obtained in cases of enfeebled, relaxed, dilated hearts, with or without a murmur, following prolonged and exhausting disease. The method is also applicable in cardiac inadequacy resulting from severe muscular effort. In incurable cases of organic cardiac disease the best symptomatic results are obtained in mitral insufficiency with dilatation. Where the compensation is maintained with difficulty and in the early stages of compensatory failure, very striking results are secured.

In all cases particular care must be exercised to adapt the baths to the individual needs. The process must be mild at the outset; weak hearts are never suitable for strong baths and *congestion-dilatation* of the heart has been observed to be distinctly increased by the bath.

If there is a fall in the blood-pressure after the bath given at a temperature of 87 degrees to 92 degrees F. (30.5 degrees—33.5 degrees C.) it indicates that the heart is weak and the bath too strong.

A perusal of the physiological action leads of necessity to the following conclusions: First, the baths administered at the indifferent zone—91.4°–95° F.—act only by influencing the breathing, and to a very slight extent affecting the distribution of the blood; there is little or no rise in blood-pressure, and where a slight rise occurs, it is but temporary; that is, it lasts only a few days, after the course of baths is finished, or until the readjustment of the circulation after the immediate effect of the baths is over. In the great majority of cases the effect of the baths is to reduce the blood-pressure, and this effect is observed from the early part of the course. Second: Baths below 91.4° F. increase the work of the heart but do so under the most favorable conditions in that they produce a comfortable sensation of warmth, frequently a sensation of more or less relief, and, at the same time, bring about a favorable change in the distribution of the blood. These effects are increased in a more or less direct proportion as the temperature of the water is diminished and the carbon dioxide and mineral content of the bath is increased.

The physiological action of the carbon dioxide gas and mineral substances in solution in the water is to excite a form of cutaneous reaction which differs from that noted in baths provided only with fresh water. None of the dissolved solid constituents of the mineral water are absorbed, as demonstrated by the experiments of Winternitz, Rohrig, Lehmann, Thompson, Rabateau and others; the gases permeate the skin, however, exerting an irritation upon the peripheral nerves, which experience a distinctive chemical stimulation.

According to Dr. Ferris, "this stimulation causes a dilatation of the peripheral capillaries, and an impression, through reflex influence, on the centers regulating the heart action as well as the nervous system, whereby increased oxidation results and metabolism is augmented. The blood proceeds toward the surface of the body, producing a peripheral hyperemia."

In the words of August Schott, the carbon dioxide baths are gymnastic exercises for a weakened heart. Their particular advantage lies in the readiness and accuracy with which this action may be gaged, since we can construct a series of baths of gradually increasing strength by beginning with the temperature near the indifferent zone—91.4° F.—and with low CO₂ content, gradually diminishing the temperature and increasing the CO₂ to the point of saturation. A further great advantage is that the baths may be given over a period of many weeks. The relation which the Saratoga effervescent bath bears to the heart muscle should be looked at in precisely the same light as a relation existing between corporeal work and the skeletal muscles. A skeletal muscle which has been weakened by disuse or by disease may have its strength increased by judicious exercise, provided always that the exercise given is well within the power of the muscle to accomplish. The cardiac muscle may be strengthened in precisely the same way by a bath procedure which exercises it, provided always that the exercise given is well within the power of the heart to accomplish. This is, in its simplest possible expression, a legitimate function of the carbon dioxide bath.

A very important evidence of the beneficial effects

derived from the proper administration of the CO₂ baths in cases of arrhythmia is the decrease in pulse deficit, more marked in instances of auricular fibrillation and auricular flutter. It is not infrequent in the balneological treatment of these cases to observe the heart contraction return to normal rhythm.

In parosysmal tachycardia, the effects of baths are quite marked, often producing a permanent benefit. In sinus arrhythmia as well as in heart block, where drug therapy has failed, a decided improvement has been observed from the careful administration of the CO₂ baths—the slowing down of the heart to a normal rhythm and improvement in the general condition of the patient.

When there is an intermittent pulse, or when ectopic beats or extra systoles are present and the heart is overburdened, the treatment often gives very gratifying results.

Auricular flutter and auricular fibrillation are indexes of myocardial impairment, and by their excitation add an increased embarrassment to the heart action. Therefore, they should be considered as serious conditions, though occasionally a patient with auricular fibrillation may live for years. Pulsus alternans is found only where there is a positive damage to the contracting power of the heart and is more ominous in character.

The frequent association of all these irregularities of the heart, with serious changes in the auriculo-ventricular bundle of His, or its branches, usually indicates a grave prognosis, although these conditions are not absolutely incompatible with long life.

Patients with moderate dyspnea on exercise, or even when at rest, and with the sensation of general lassitude, which are the expressions of the early stages of cardiac insufficiency, are, in general, the most appropriate cases for this treatment. On the other hand, slightly greater degrees of heart weakness, as evidenced by slight enlargement and tenderness of the liver and the earliest beginnings of edema of the feet, may be with propriety considered as being, in most cases at least, proper subjects for the baths. Under no circumstances should patients with higher degrees of edema, very marked enlargement and tenderness of the liver, and with effusions into the serous cavities, be subjected to any form of carbon dioxide baths, even the mildest. Such patients need rest in bed, digitalis, and means to take the work off the heart.

In cases where the signs of cardiac insufficiency are developing with rapidity, or where the cause is one which is presumably increasing, even though the monetary degree of insufficiency be not great, the method is inappropriate.

Honan says that toxemia due to high living, often in the form of overeating or malassimilation, is accountable for a large percentage of cardiovascular troubles in the well-to-do men of fifty years or over. I know of no other form of treatment which so quickly clears up these troubles as the CO₂ baths. The active elimination caused by these baths promotes the expulsion of poisonous products from the system, whether these products are due to a direct invasion, or the result of some acute disease, or the more chronic and much more common result of errors of diet. A careful study of these etiological factors shows us why a closely regulated diet, carefully prescribed exercise and rest are so often a necessary accompaniment of the baths.

One of the early effects of the CO₂ bath treatment in cases of chronic myocarditis is an increased diuresis. When the integrity of the heart muscle is impaired there is a decrease in urine output. This functional impairment of the kidneys is more marked during the day, the night urine often being in excess. The baths unburden the embarrassed heart and increase its functional activity, resulting in increased diuresis with reduction of edema, if present, and relief of dyspnea.

Cardiac hypertrophy is frequently due to defective valves, and arterial resistance or obstruction in the pulmonary or general circulation. The resistance is due to a hyperplastic infiltration in the arterial walls, reaching the endothelium and constricting the lumen of the vessels. The hypertrophy may become pathological if the resistance is great or long continued.

Dilatation is the result of hypertrophy or of a weakened myocardium from other causes. Passive dilatation may also occur from valvular defect or sudden strain, without hypertrophy. If the dilatation is acute, absolute rest is the treatment, while the after effects due to an impaired circulation may be much improved by the CO₂ baths.

The complicated form of hyperpiesis in the cardiovascular nephritic is much more difficult to recognize, being very insidious in development and its symptoms less marked. In the great majority of cases of sclerosis of the kidney we have found an irregular variation in the blood-pressure readings, which are reduced less by absolute rest than in hyperpiesis simplex, while a heavy meal causes a greater pressure increase. The polyuria and cardiac hypertrophy, while aiding the diagnosis, tend to keep the kidney function approximately normal. In these cases the high blood-pressure is compensatory and should be reduced very cautiously. As previously mentioned, many of these cases are due to faulty metabolism, caused by errors in diet, and therefore it is obvious that a restricted diet is an important factor in aiding the balneological treatment. In restricting the quantity of food and drink the physician must see that the patient has sufficient food to maintain the body energy. Close vigilance is necessary to avoid such exercise as may overtax the blood-vessels and cause a cerebral hemorrhage.

The baths in these cases must be administered cautiously, and the bowels and kidneys kept active. Although cases of this class require very close watching, the results of balneological treatment are quite as satisfactory as in cases of uncomplicated high blood pressure and well repay the great care exercised.

Contra-Indications.

In the majority of instances the Saratoga régime is not applicable in angina pectoris and especially in those cases in which the disease is due to organic coronary disease. A blood-pressure of 170 or over is regarded as a distinct contra-indication for the administration of the effervescent bath treatment in angina pectoris. While most authors agree that mild cases of angina may be submitted with safety to the baths, they do so with a feeling of considerable trepidation, as a rule. It would seem as though it were hardly necessary to state that in cases of cerebral hemorrhage or aneurysm, or in cases of rather recent endocarditis, where the possibility of embolism must always be thought of, the baths are absolutely contraindicated. A more difficult question to decide

is as to their propriety in cases of contracted kidney, and in arterio-sclerosis with cardiac insufficiency. While this question is one which must invariably be tinged with a certain amount of subjectivity, and while opinions on the subject are widely divergent, our experience has shown that their use in arterio-sclerosis, especially in cases where the blood-pressure is only moderately increased, is distinctly beneficial.

Our guide as to whether the patient is reacting properly to the bath should be, in the first place, the blood-pressure. Under no circumstances should the blood-pressure in the bath fall below that which obtained under similar conditions just before entering the bath. Even a very slight diminution of the blood-pressure indicates that the case is being injured, not benefited, and this is all the more so if the patient complains of a sense of oppression, palpitation, great nervousness, etc. The first baths should be regarded as trials, and no material change should be made in the frequency, temperature or composition of the bath without a careful determination of the pulse-pressure, as well as an examination of the patient on leaving the bath, due attention being paid to his subjective sensations.

The observations thus far made at Saratoga Springs tally well with those made at European spas, by Drs. Honan, Schott and others, and have proved beyond any doubt the value of this form of treatment in cardiovascular diseases. We feel we have convincing proof that we have in the effervescent bath as administered in Saratoga Springs a therapeutic measure of the highest value, one that admits of the finest gradations in administration, and a variation in application impossible in any other therapeutic measure. The greater permanence and reliability of the effects of these baths bespeak for them a confidence which drug therapy cannot command.

In conclusion, the effervescent bath at Saratoga Springs affords us a reliable therapeutic measure in almost every form of cardiovascular diseases, as the most natural stimulation to the heart and vasomotor system. As an active agent in producing general elimination, in equalizing impaired circulation, in the correction of abnormal blood-pressure, and in arresting undesirable tissue change, there is no other therapeutic measure so reliable. The invariable action of the baths and their safety, when administered as indicated, give them a place in therapeutics which is becoming more and more unassailable.

150 Phila Street.

Experimental Tracheo-Bronchial Lymph Node Tuberculosis in the Guinea Pig.

Allen K. Krause presents the first of a series of studies on tuberculosis infection from the Tuberculosis Laboratory of the Johns Hopkins Hospital. If guinea pigs are inoculated subcutaneously in the right groin with human tubercle bacilli of low virulence (such as the R 1 strain of the Saranac Laboratory), and are allowed to live for several months, it is uniformly found that the tracheo-bronchial nodes have visible tuberculosis while the lungs and other viscera are apparently free. Inasmuch as practically all bacilli that get to tracheo-bronchial nodes must have first settled out of the pulmonary circulation in the lungs and thence travelled to the nodes by way of the pulmonary lymphatics, these observations suggest that one of two factors (or both) are at work to bring about the result mentioned: either (1) the tracheo-bronchial nodes of the guinea pig are inherently fertile soil for tubercle bacilli as compared with the lungs; or (2) anatomic relations are such that localization is easier in the nodes than in the lungs. Experimental studies on both of these factors will be published later.—(*American Review of Tuberculosis*, Vol. III, No. 1.)

UNCLE SAM'S WAR CRIPPLES GO TO SCHOOL AGAIN.

RICA BRENNER

RED CROSS INSTITUTE FOR CRIPPLED AND DISABLED MEN,
New York

In the case history of almost every hospital patient there comes a time of depression and discouragement, which is due, in part, to physical weakness and pain and, to a greater extent, to enforced mental and physical idleness. Because of the direct bearing upon recovery that such depression has, medical men have sought for a solution to the problem of lessening its dangers; and they have found it. Handicrafts that are taught the patient while he is still in bed exercise his muscles and nerves and, at the same time, so occupy his mind that he is not likely to become downhearted.

At the Walter Reed Hospital, Takoma Park, Washington, D. C., one of the government hospitals for soldiers and sailors, this work of teaching handicrafts was begun in February, 1918. Reconstruction aides, or "Blue Gowns" as they are called, taught the men to knit colored squares for blankets and some machine knitting was done. From that beginning the work has so grown that it now includes instruction in chair caning, woodwork, block printing, rush seating, brush making, bookbinding, modeling, rug making, leather work, basketry and bead work.



1. Linotype Operating.

At a government hospital, however, it is not only the patient still in bed or still in his ward who must be kept occupied; nor is the desirability of guarding against depression the only reason for introducing occupational training into hospital treatment. For there are men, able to get about and leave their wards, who must remain at the hospital for further care. And in many cases loss of limb or some other physical injury makes necessary re-education and readjustment before the patient can properly return to his former life. These men, too, must be kept busy; they must exercise injured limbs; and finally, they must relearn their old trade or learn a new one. So, because the government's duty toward its soldiers and sailors does not cease until they have been discharged from service and been restored



2. Treadle Action to Restore Use to Stiffened Ankle.

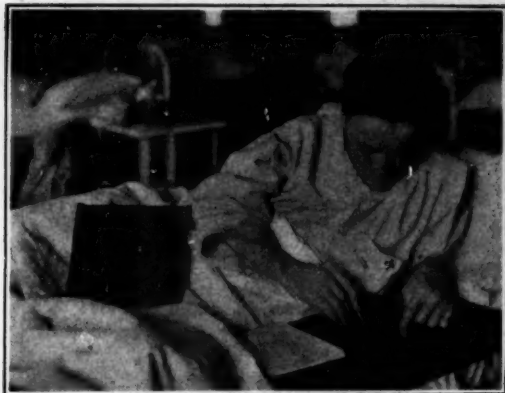
to civil life, its hospitals have added to their buildings class rooms and work shops where such men can receive the training they need.

At Walter Reed, this larger work was also begun in February, 1918, when the simplest kind of carpentry was started in the orthopedic ward and in the Lay Homestead. "After a preliminary trial," says a report on the work, "it was found that such treatment of functional defects as had been planned was impossible without adequate equipment. The work which had been started proved, however, of very definite value in keeping cheerful, contented, and physically well the patients who were engaged in it; and with this value in mind the shop was continued for those patients who cared to work in it."

Gradually a department of occupational therapy was built up. Shops were constructed and courses were added until, at the present, the department has some seven or eight buildings under its charge and offers more than eighty different courses. The fundamental aim of all the work is curative. But its specific purpose as formulated by Major B. T. Baldwin, Director of the department at Walter Reed, is "to help each patient find himself and function again as a complete man, physically, socially, educationally and economically."

Underlying the educational work is the work of the psychological and statistical department. This department has made psychological and educational surveys; it has studied the adaption of curative methods to patients and to disabilities and the application of trade tests for vocational guidance.

The instruction proper is divided into two groups: the general or academic, and the technical. The former provides studies for those who have not had school training, or for those who need greater academic training for other courses they wish to take. It, in turn, is divided into academic and commercial studies. The academic work ranges from the most elementary to that of high school grade and includes courses in modern languages, mathematics, civil service preparation, science and history. One of the most interesting of the courses is that of penmanship and left-handed writing. As may well be imagined, this course is a popular one with those whose right arms have been injured.



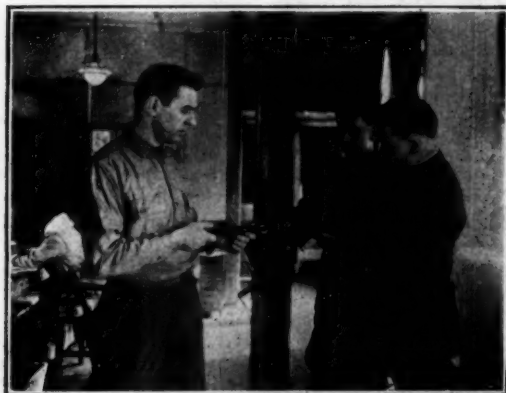
3. Clay Modelling: A Ward Case.

The commercial division gives instruction in all those subjects which are taught in the ordinary commercial school: Commercial arithmetic and English, shorthand, stenotypy, filing, recording, bookkeeping, salesmanship, commercial law. Here, too, special attention is given to the operation of machines by the physically disabled.

The technical department has by far the larger number of courses and to those unfamiliar with what disabled men can do is perhaps the more interesting of the two large groups. In the workshops complete instruction is given under the departments of printing, mechanics and electricity, drafting, woodworking, display printing, arts and crafts, leather work, and rug weaving; and training in agricultural work is given on the farm and in the greenhouses.

The curative value of the courses receives the first emphasis. Much of the electrical work, for example, is arranged for those needing special curative exercises. In the engineering and drafting and in the jewelry and metal departments pupil-patients learn re-establishment of finger and hand control. The winding of films in the cinematograph department provides a means of educating the left hand. In the rug department, the concentration necessary for selecting colors and planning designs is of decided value in mental cases.

Nevertheless, in the mind of the department of occupational therapy, the curative value of its work is not incompatible with an economic and an industrial value. The work is conducted in a practical way under practical workshop conditions, where the men, forming



4. Metro-therapy Method of Measuring Increased Movement of Wrist Joint.

social and industrial groups, turn out tangible objects of economic value. The automobile department, for example, repairs the hospital machines; the Farm supplies some of the needed food; the woodworking department does much post repair work; the printing department prints the hospital announcements, catalogues and reports.

The attendance at courses has, from the very first, been voluntary. This fact, added to the shifting nature of a hospital population, makes it necessary for steps to be taken to interest the men in the work and enroll them in courses. Bulletins are issued giving detailed information concerning the courses that are offered. A map of the grounds is given to each patient; on it appear lists of the courses with the buildings in which they are given and the following invitation.

"If you are a patient, you want your health and your strength and your hospital discharge as soon as possible. Doing something with your hands and your head will greatly aid in these. What you do here may help you to know and to do your old job better or may lead to a job you like better and thus give you a happier life.

"If you can leave the ward, you can visit the building named at the top of each list and try the kind of work you would like to do. The map will show you the way to the buildings. Come and see. Look over the lists."

Besides this printed publicity, weekly meetings are held in the Red Cross house of the post auditorium to show the advantages of the work. Addresses are made by the officers in charge; demonstrations of ability given by the men; moving pictures shown; and games and exercises played by the disabled.

When the patient signifies his willingness to enroll—more frequently it is his eager desire to do so—his medical officer fills out his prescription blank. On it are indicated the diagnosis of the case, the probable length of stay in the hospital, the results to be attained, what curative work is needed and what must be avoided. The officer indicates for what assignments the man is ready, whether for ward work, class room, farm or shop; for curative or occupational purposes; and the number of hours to be employed. The assignment office arranges his work and a daily schedule is made out showing his employment for every half hour from eight until half-past four. Complete records are kept for the improvement and history of individual cases and of the work of the whole class.

The January report of the department of occupational therapy at Walter Reed shows that such methods have increased the total enrollment in courses from 362 in June, 1918 to 1,723 in November, and 1,437 at the end of January, 1918.

The work at Walter Reed is typical of the work done at all government hospitals. As a result of this new kind of treatment in government hospitals, men recover more quickly and completely. Disabled men discover the kind of work they can do and receive preliminary instruction in it, which is supplemented later by the free instruction provided under the federal vocational rehabilitation act. Furthermore, the government hospitals are paving the way for similar treatment at other hospitals. They are forming the training school, demonstration laboratory, and experimental workshops for those who will apply the methods in the cases of civilian patients.

So the work goes on. While bodies are being mended, minds are being trained, and true education is being received. For what truer education is there than to be taught to "function again as a complete man"?

The Diagnostic Laboratory

Conducted by CHESTER T. STONE, M. D.,
Brooklyn, N. Y.

Staining of Bacteria in Tissues for Bacteriologic Study of Pneumonic Foci.

This is a modification of the method as applied especially to the Pfeiffer bacillus. There are many rules and directions laid down for the staining of bacteria in tissue, especially when microphages and macrophages are concerned; but the most important requirement is that, while the cell protoplasm shall be moderately bleached, the nuclei and the bacteria shall become and remain plainly visible. Last fall a pandemic of influenza swept over Japan. In investigations undertaken to ascertain the morphology and the incidence of the bacterial phenomena, many of the staining methods did not produce the best results, but with my modification of the carbolfuchsin staining fluid satisfactory results were achieved.

Modified Staining Method.

1. The frozen sections should be cut as thin as possible and glued to the object glass by means of an egg-white glycerin mixture.
2. They should be stained for a period of from ten to twenty minutes in a solution of carbolfuchsin which has been prepared by dissolving 1 c.c. of carbolfuchsin in 10 c.c. of water.
3. The differentiation is accomplished by the use of weakly acidulated warm water (two drops of glacial acetic acid to about 250 c.c. of water). The sections should be left in the solution until they take on a rose-violet hue.
4. The sections are now rinsed in water.
5. They are then dried in the air, no alcohol being used.
6. They afterward transferred to a xylene bath and are then embedded in a neutral balsam. (Kuyoshi Sato, Tokyo Pathologic Laboratory, Red Cross Hospital.)

Bacillus of Colon Group Isolated from Cystitis Urine.

The organism isolated by Niwa from cystitis urine is a member of the colon group which is not named, but according to McConkey is to be classified in Group 2, according to Jenson-Bahr's list in Subgroup G of *B. coli*, and to be located as No. 227 of Group XV on the list published by Bergey and Deehan, 1908. In the fermentation tests with different sugars, this organism fermented dextrose, lactose, dulcitol, mannitol, maltose, raffinose, adonitol and inulin with the production of acid and gas without any delay, whereas it did not ferment saccharose at all. Of those sugars the gas production through this organism was the strongest in mannitol and maltose, and then in dulcitol, lactose, dextrose and adonitol, while in raffinose and inulin it was the weakest. The acidity produced by this organism in those sugar mediums was most marked in mannitol, maltose, dulcitol and lactose, and then in dextrose and adonitol, while in raffinose and inulin it was only feeble. This organism proved to be pathogenic and pyogenic to animals, such as the mouse and guinea-pig. The serum of the patient in question showed a strong agglutinating power to this organism. Hence, Niwa suggests that this organism may be the active cause of his case of cystitis. (*Jour. Med. Research.*)

Fermentation in the Urine with Pyelitis.

Peters was able to find on record only four cases like the one he recently encountered himself in which the urine was thick and ropy and showed signs of fermentation. His patient was a pregnant young woman with pyelitis and intermittent fever. This phenomenon of jellification and fermentation of the urine seems to be the work of a special variety of colon bacilli, the *Bacterium coli mobile capsulatum*. It has been called the *Bacterium glischrogenum* by others. In the total five cases it was found in pure culture in the urine. The pyelitis in his case was evidently pregnancy; it subsided after the normal delivery, and the urine returned to normal after the bladder had been disinfected. (*Nederlandsch Tijdschrift v. Geneeskunde*, Amsterdam, Feb. 8, 1919.)

Serodiagnosis of Inherited Syphilis.

Barbier has been making a special study of atrophy in nurslings during the last fifteen years, and reports a positive Bordet-Wassermann reaction in 33 per cent. of ninety-three infants with atrophy. A number of others were certainly syphilitic, so that the proportion was at least 42 per cent. In 11 per cent. there was an unmistakable tuberculous taint. Atrophy from improper or inadequate feeding can be effectually combated by regulating the diet, but these inherited taints call for specific treatment besides. Some of the infants begin to thrive when mercury is given; others are unable to bear it. In any event, he warns that it should be given very cautiously, in minimal doses. (*Arch. de Med. des Enfants*, Paris, April, 1919.)

Acute Nephritis Without Albuminuria.

Davidsohn describes in detail three cases in which a focal glomerular nephritis was accompanied by quantities of formed elements in the urine, but no, or slight and transient, albuminuria. Oliguria was constant but never very pronounced. In two of his cases hematuria for two or three days was the first symptom, and one patient had colic-like pains. As every acute nephritis may run into a chronic form unless it gets proper treatment, the importance is obvious of not overlooking the nephritis in cases of this kind without albuminuria. (*Deut. med. Woch.*, Jan., 1919.)

Diphtheroid Bacilli in Urethritis and Prostatitis.

One hundred and twenty-nine wounds were examined bacteriologically (swabs) by Janes and Thomas. Eighty-two, or 63.5 per cent., showed diphtheroid organisms. Of these, thirty were isolated in pure culture at intervals during a period of four months. Three of these proved to be true Klebs-Loeffler bacilli and twenty-seven were wound diphtheroids, that is, 10 per cent. of the isolated organisms were *B. diphtheriae*. Assuming that this is a fair proportion, then 6.4 per cent. of the wounds were infected with *B. diphtheriae*. Clinically, it is impossible to diagnose between diphtheroid and true diphtherial infection of wounds. A membrane does not necessarily indicate the presence of *B. diphtheriae* wounds. It is not possible to distinguish between diphtheria bacilli and wound diphtheroids by morphologic characters.

Only by sugar reactions obtained from pure cultures can diphtheroid organisms be distinguished from true Klebs-Loeffler and only after positive animal inoculation is it advisable to diagnose diphtheria in wounds. Flavine appears to have given better results than any other form of local treatment used.

The authors believe that it is advisable to administer diphtheria antitoxin in cases of diphtheria in wounds. The importance of giving a sensitizing dose in cases of war wounds due to their having received previous injections of serum is emphasized, on the basis that if this rule is not followed severe anaphylactic reactions will occur in some cases. (*Canadian Med. Assn. Jour.*, May, 1919.)

Colored Urines.

A young man in the hospital, on account of chronic nephritis, began to void green urine, and the liver showed signs of congestion. Chemical tests of the urine showed the presence of biliverdin. The patient soon died. Widal knows of a second similar case, and he reviews the various types of colored urine that may be encountered, white blue, violet, green, red or black. One man of 46 had been taking 3 gm. of tannin daily for some time, and his urine turned black under the action of oxygen. The sweat may also be of abnormal color. A case has recently been recorded at Bahia which presented typical polychromidrosis. (*Amazonas Médico*, Manaus, June, 1919.)

Eosinophilic Proctitis.

Lara was unable to find amebas or any helminths in 80 per cent. of the stools of young children presenting symptoms of enteritis suggesting dysentery. Scraps of the bleeding mucosa from eighty-seven infants showed a yellow layer of eosinophil cells with granular protoplasm, and numerous Charcot-Robin crystals. The blood count in eleven in this group showed an average of 7 per cent. eosinophilis during the acute phase, and of 11 per cent. at defervescence. Necropsy of three of the infants, from nine to fifteen months old, revealed congestion and ecchymotic patches. Along with the dysenteriform enteritis and slight fever there was sometimes an occasional dry cough, with signs of alimentary autointoxication plus infection, favored by the general depression from teething, the whole presenting a clinical picture like that of eosinophilic proctitis. (*Revista Medica de Yucatan*, Jan., 1918.)

Colorimeter Determination of Nitrogen in Blood and Urine.

Salvesen's research amply confirms the reliability and simplicity of the Folin-Denis methods for determining the total nitrogen, ammonia and urea in the urine, and the non-protein nitrogen in the blood. He considers them superior to other technic, especially for the urine. The reaction is the change in tint after addition to Nessler's reagent. This is prepared with mercuric iodid and potassium iodid with addition of sodium hydroxid. (*Norsk Mag. for Laegevidenskaben*, Christiania, Feb., 1919.)

Value of Cooked Meat Medium for Bacteria Study.

Holman contends that the cooked meat medium is the most useful medium for obtaining growth of both anaerobic and aerobic bacteria, for storing mixed cultures for later isolation as well as pure cultures for further investigations. It is a medium simply made which can be sterilized readily, and owing to its high buffer character is adaptable to the growth of a great variety of bacteria.

Yeast Autolysate as a Culture Medium for Bacteria.

Experiments made by Kligler indicate that yeast permitted to undergo autolysis may serve as a cheap

substitute for more expensive animal proteins or their digestion in products. The autolysate contains a high percentage of amino nitrogen and a relatively small amount of the higher nitrogen complexes. The fact that some bacteria, notably pneumococcus meningococcus, etc., do not thrive as well in the yeast broth as they do in beef infusion media would indicate that the higher nitrogen complexes—polypeptides, etc.—play some part in bacterial nutrition. On the whole, however, it seems that the yeast autolysate media are entirely satisfactory for the cultivation of the less delicate pathogenic bacteria. Endo and brilliant green plates made with this medium give entirely satisfactory results. (*Jour. of Bact.*, March, 1919.)

Physiology of Endogenous Uric Acid.

The uric acid output of two normal individuals and fifteen other subjects who were convalescents and patients was studied by Host. In none of the seventeen subjects was the uric acid output for twenty-four hours constant. But with a fixed diet and under similar conditions the uric acid output in a few subjects was constant, while in a majority of those examined it was extremely irregular and showed variations from day to day up to 80 per cent. But even in the individuals whose output of uric acid was most regular, the output was dependent on several factors, of which variations in the diet are the most important.

In every increase or decrease of the caloric value of the food beyond a certain minimum, the uric acid output was always changed in the same direction. This took place whether the caloric value was varied by means of protein, fat or carbohydrate; the change in the uric acid output was, however, greater when the amount of calories was varied by means of protein rather than by nitrogen-free food elements. With a constant food caloric value the uric acid output depended to a certain extent on the food protein, so that a change in the latter beyond a certain minimum always produced a corresponding change in the uric acid output. The excretion of nitrogen and hydrogen ion concentration of the urine were without influence on the endogenous uric acid output. On the other hand, increase of body temperature produced a considerable increase in the uric acid output.

The endogenous uric acid output in twenty-four hours varied between 0.27 and 0.99 gm.; the last value is obtained in a normal person on an extensive bread diet. The amount of the endogenous uric acid in the blood varied to a great extent the minimum being less than 0.50 gm.; the maximum being 2.68 gm. per hundred c.c. of blood but is constant in the case of each individual within the limit of error of the method (10 per cent.). In 70 per cent. of the subjects the uric acid concentration is between 0.01 and 0.02 gm. per hundred c.c. of blood. (*Jour. Biol. Chem.*, May, 1919.)

Direct Blood Platelet Count.

Thomsen comments on the unreliability of the usual methods in vogue for determining the blood platelet count, and describes a method which seems to be accurate. He found with it a blood platelet content of from 206,700 to 413,400 in healthy persons, the average being below 300,000. He examined sixty-eight persons, sick and well, including some with infectious diseases. In the latter the platelet count was high. His method consists in preventing

coagulation in the blood by adding a little sodium citrate then setting aside until the corpuscles have settled to the bottom, and then counting the blood platelets in the citrated plasma above. The platelets do not settle down until after several hours, while the corpuscles settle not only by their own weight but by the influence of agglutination of which there is always more or less in different specimens of blood. He gives formulas and tables to facilitate the computations. (*Hospitalstidende, Copenhagen.*)

Germans Tried to Make Drug Fiends.

German scientists had intended to make drug fiends of all the nations which opposed Germany, according to Alex Aabel, chief engineer of the steamer "Frederica," which is here from Iceland. Mr. Aabel told of a conversation he had had in Iceland with a German scientist on the subject.

"If they had only waited," the German said, "we, the scientists and chemists of Germany, could have infused poison into the blood of the whole world so skillfully and so insidiously that in the course of comparatively few years Germany would have had to fight only an alliance of drug-fiend nations.

"In patent medicines, in tooth paste and powders, in various well known and much used prophylactic preparations, we had planned to introduced morphia, cocaine and other habit-forming drugs.

"Tooth paste containing drugs had already been distributed to natives on the coast of Africa, who, without knowing why, enjoyed the sensation resulting from its use and became addicted to it." (*New York Tribune.*)

No More Wassermann Reactions.

It is said that the Societe de Biologie has officially done away with the expression "Wassermann Reaction," which is to be known only as the Sigma Reaction. No reason is given for this change. (*Pathologia.*)

Hyaline Casts in the Urine.

In a letter to the *Lancet*, Sir James Goodhart declares that hyaline casts are found so often in the sediment of centrifugalized urine, when there are no other evidences of renal disease, that many times they may be passed over as of no significance. Sir James doubts whether many of these casts come from the kidneys at all and believes that if there is no other indication of renal disturbance, they may be ignored. Surely, he says, they can not all be washed-out blood casts, and he raises the question whether many of them may not be mucinous and added to the urine in transit from the kidneys to the bladder. (*Medical Brief.*)

Quantitative Determination of Pus in the Urine.

Jorgensen expresses surprise that greater attention is not paid to the quantitative determination of pus in the urine now that Norgaard has given us a reliable method for the purpose. He mixes hydrogen dioxide with the urine, collects the oxygen that is released and measures the total at the end of three hours. The number of cubic centimeters of oxygen per 1 c.c. of urine is the index of the catalase action, and hence throws more light on suppurative disease in the urinary apparatus. (*Ugeskrift for Laeger, Copenhagen.*)

62 Pierrepont Street.

Public Health

Air Space Required by Institutional Children.

The subject of air space and the ventilation of children's wards has been one of particular study by the Pediatric Section of the New York Academy of Medicine. The laws of New York, like those of other States, have made certain provisions in this direction. Specific specifications, however, have not been adequate. While specifying 600 cubic feet as a minimum, these laws in many instances have given local boards of health the power to reduce this allowance. This space has frequently been reduced to 500 feet or even less. It has been erroneously assumed that infants and children, because of lesser weight than adults, require a lesser amount of oxygen. In institutions the children remain in the same crib and ward practically during the entire twenty-four hours, and their attendants, who are not inclined in the same permit, help to vitiate the air of the ward.

Three main factors enter into the question of cubic space for an infant in a ward: (1) Space to afford reasonably pure air for respiration; (2) space to allow sufficient separation of the cribs in order to minimize air-borne infections; (3) space to avoid overcrowding, which operates to reduce the individual care which can be given to each infant by a limited number of nurses and attendants.

Respiratory need is but one factor in metabolism; equally important elements are the temperature of the air, its humidity, the barometric pressure and the rapidity of its motion. All these are determining factors in the heat expenditure of the body. According to Lusk, the heat production of a newborn infant is 2.6 times that of its mother, based upon calories produced per kilogram of body weight. The surface area per kilogram of a small body is two or three times greater than that of a large body. The smaller the animal or child, the greater the relative surface exposed for evaporation and for giving off or receiving heat. The infant and adult have relatively different needs because of the disproportion between the weight and surface area. The heat expenditure of a six months' old infant is 130 calories a kilogram of body weight, while that of a child eighteen months old is only 91 calories a kilogram.

The chief organ concerned in metabolism is the liver; its weight in the infant to the body weight is as one to twenty, while in adults the ratio is only one to forty.

The infant requires daily 105 to 110 calories of food per kilogram of body weight and the adult requires only 35 calories per kilogram. An infant of ten weeks eliminates 1.6 grams of perspiration per kilogram of weight, while an adult eliminates one-half of the amount, 0.80 grams. A fifteen-pound child develops 90 B. T. U. per hour while a 150 pound man at light exercise develops about 40 B. T. U. per hour. The man is ten times heavier than the child but produces only four and one-half times as much heat. The infant breathes one and a half to two times as fast as the adult. These deductions from careful experiments demonstrate that the metabolic requirements of the infant are relatively much greater than those of the adult. The important part played by oxygen in metabolism consequently makes the need of fresh air imperative for the infant.

For respiratory purposes the adult needs 30 cubic feet of fresh air a minute. By old standards, it was thought that 600 to 1,000 cubic feet of air space would suffice if the air was changed three times an hour, but modern hospitals for adults require 1,800 to 2,000 cubic feet, with more for infectious cases. Inquiry shows that in the judgment of modern pediatricists, children should have 1,000 to 1,500 cubic feet available, and these amounts, at least, are provided in most modern hospitals for infants.

When one considers the part played by ward infections in the morbidity and the mortality of infants, the present proximity of cribs permitted by law is to be condemned. It is agreed by pediatricists that not only is the spread of the common eruptive diseases favored by overcrowding, but, more important in infancy, the dangers from infections of the respiratory tract spread by coughing and sneezing—infectious colds, influenza, pneumonia, diphtheria, etc., are greatly enhanced by proximity. The minimum distance permitted by the present law is but two feet and no greater separation is usually possible when the allowance of air space is but 500 cubic feet. The pediatricists of the infants' wards in the hospitals of the University of Minnesota, after careful study concerning the prevention of cross-infection, have specified six feet as the desirable mini-

mum for the separation of cribs. If every infant were allowed a minimum of 100 square feet of floor space there would be more than six feet of floor space between the cribs. Overcrowding invariably results in undercare, and pediatricians are unanimous in asserting that care is imperative if artificially-fed babies are to thrive. Mortality rises steadily in proportion as the number of cases in the ward are increased. Space, therefore, has more than one bearing upon infant mortality. It is a basic factor which underlies many other essentials for survival of the infant.

It is important to lay particular emphasis upon the fact that cubic space is not a perfect standard for respiratory needs. Ventilation is important and complementary. In a well-kept, properly managed and thoroughly ventilated modern institution less than 1,000 to 1,500 cubic feet for an infant might perhaps be allowed with safety. The elements that must be considered when scientific standards for ventilation are formulated are as follows: Floor space allowed for each bed; height of rooms; window space; sunlight exposure; facilities for ventilation, as number and position of windows, doors, transoms and position of beds; method employed to secure ventilation; if artificial; character of the babies cared for, including age, conditions of health, whether bottle-fed; number of babies in a given ward and proportion of nurses or adults in the wards to the number of babies cared for; the infant mortality at the institution in question; and, last, the purity of the air.

The following are considered adequate standards of purity of the air: Temperature, 62° to 68° F.; humidity, 40 to 50 per cent.; wet-bulb thermometer should register below 70° F.; movements, gentle currents, three feet a second or two miles an hour—air moving more rapidly than three feet a second is felt as a draft; carbon dioxide contents should not exceed six parts in 10,000 by the lime-water test; freedom from dust, microorganisms, gases and odors—air should not contain more than fifty microorganism a cubic foot (expose nutrient medium in Petri dishes and count colonies of growth); normal clinical effects on mucous membranes and upon blood-pressure; quantity not less than thirty feet a minute a child.

In summing up the whole subject the committee recommends: (1) The present law relating to ventilation in institutions for children, which is utterly inadequate, should be abrogated and superseded by legislation, which should be based on definite and scientifically grounded standards. (2) The air space allowed should be from 1,000 to 1,500 cubic feet for a child, especially for sick babies. Artificially-fed babies, owing to the frequency of digestive disturbances, their susceptibility to illness and their high mortality, should be rated as sick babies. There is no essential difference between institution wards and hospital wards when infants are artificially fed. The longer stay in the institution than in the hospital increases the susceptibility to illness and manurition and at least equalizes the requirements for space. Newborn infants might be allowed less space for the first two weeks of life if nursed at the breast. (3) When rooms are very high the cubic space for a child should be made liberal to prevent proximity of beds; each bed should have 100 square feet of floor space. (4) In order to minimize the danger from cross-infection, beds and cribs should be separated from each other by a distance considerably greater than the two feet required by the present law; six feet would make a desirable distance between beds. (5) All rooms, particularly those in which artificially-fed infants are kept, should be provided with proper devices for window ventilation at all seasons. (6) The State Department of Health should possess the exclusive power of control and regulation and no local board or department of health should have the power to alter the standards specified in the law. Exceptional permits to deviate from normal standards may only be granted by the State Commissioner of Health upon the recommendation of an accredited inspector, accompanied by a written report showing adequate grounds for such recommendation. (7) Frequent inspection should be required at irregular intervals.—(F. M. Crandall in *Prog. Med.*, March, 1919.)

Diagnostic Health Centers a State Need.

Just as the health service worker is essential to the success of every campaign for the promotion of community health so also do these various campaigns point to the need for the community health center with clinical opportunities for the early detection of disease, with facilities for the treatment of cases which come under the head of dispensary cases, and with a social service department for work in the homes and for supervision of cases under treatment, says the Wisconsin Anti-Tuberculosis Association.

Three specific campaigns upon which the forces of the state are now engaged demand the immediate establishment of a chain of diagnostic centers if the people of the state are to get full value from these campaigns. They are the campaigns against—Tuberculosis, Child Mortality, Venereal Disease.

Such diagnostic centers would greatly increase the efficiency of the state and county tuberculosis sanatoria. The early discovery of the disease supplemented by the influence exerted through the social service department to induce each case needing sanatorium care to begin the treatment at the earliest possible moment would inevitably shorten the period of time of treatment for a large number of patients. It would be possible to send them home earlier than is now the case if they could be kept under supervision. There would be less danger of the patient's relapse from overdoing or from carelessness if this post-institutional care were provided. The diagnostic station and social service department, whether operating as a part of a general community health center or as the out-patient department of a sanatorium would therefore make it possible for the sanatorium to:

1. Increase the patient's chance of recovery through early discovery of the disease.
2. Shorten the period of treatment in many cases by getting the patient under care in the early and most hopeful stage of the disease.
3. Discharge the patient from the sanatorium earlier than is now possible and continue the treatment in the home.
4. Minimize the number of other cases from the same family by periodical examination of its other members exposed to the infection.
5. Reduce the number of readmissions due to the failure of patients to follow sanatorium instruction after they return home.
6. Increase the number of patients cared for during the year by cutting down the period of treatment necessary in individual cases.

The need of Child Welfare stations in all parts of the state is too well recognized as a result of Baby Week and Children's Year campaigns to require any special emphasis on the relation of the community health center to the campaign for the saving of children's lives. The need for diagnostic stations to supplement the work of school inspection and to make it possible for school nurses to get the more thorough examination, for which their inspection work has indicated the need, is perhaps not as generally recognized except by the professional workers. It is a big need, however, and one which every nurse in school work appreciates. The importance of it has been demonstrated in Milwaukee's Demonstration Nutrition Clinic where the thorough medical examination of underweight children has uncovered three cases of incipient tuberculosis, one serious case of Bright's disease, several cases of heart disease, and many other cases demanding medical attention.

Experience has proved that the treatment of venereal disease can be given better and much more economically as a rule in the dispensary than in the hospital. Facilities for giving this treatment are absolutely essential to the success of the campaign which the nation and the state have undertaken. *Those communities will get the best service from the nation and state which place at the disposal of the state the best local facilities for carrying on the work.*

Public health nurses and health instructors, whether working for county or city, afford a natural nucleus around which to build up the social service department of the community health centers. In communities where they are already at work they will welcome the coming of the dispensary and diagnostic station. In communities where there is no organized health service, the employment of the trained field worker may well be the first step. *The health center should follow at the earliest opportunity.*—(The Crusader, Milwaukee, March, 1919.)

Recurrent dislocation of the jaw should be treated by operation. The coronoid process, or the insertion of the temporal muscle into it, should be tied up to the anterior part of the zygomatic arch. This may be done with silver wire or with slowly absorbable suture material. The operation, though not so easy of execution as it sounds, is less difficult than the attack on the temporomaxillary joint, is much more logical, and more mechanically efficient; it does not injure important structures, and the scar is not disfiguring. The result should be one hundred per cent. success.—(Blake).

Probably Meant Florida: "So the doctor told you to go to a warmer climate. What was the nature of the trouble you consulted him about?"
"I went there to collect a bill."—*Boston Transcript.*

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The Means of Retaining and Enhancing Vigor in Middle Age.

In pursuance of our plan for presenting to the readers of the MEDICAL TIMES suggestions for the betterment of survival values in those nearing or passing the meridian and approaching the long shadows, we have afforded Dr. J. Madison Taylor opportunity for expressing his views and recommendations. He has always given attention to this topic, and for reasons similar to those accredited to Metchnikoff. This is to the effect that when an individual becomes acutely aware of middle aged deteriorations in enthusiasms, in energy content, and in endurance, in short, as he approaches the "period of slowest decline," he should not be indifferent nor repine, but turn his efforts to rendering this decline as slow as possible.

Metchnikoff is said to have admitted that his own zeal in searching means of "prolongation of life" was notably quickened by the wish to become a personal winner in the obstacle race, to save and enhance to the uttermost all his available potentialities, to keep in the forefront of productiveness and social acceptability till the last clang of the bell.

Dr. Taylor speaks from the standpoint of an actual doer, a participator in most, if not all of the measures he presents for consideration. Urged by personal tastes, capabilities, proficiencies in motor aptitudes, by a sense of obligation to himself as well, he has become practically familiar with most constructive and reconstructive measures, and has himself experienced their reactions and effects.

This personal familiarity, he maintains, is the only sure means of judging fairly, or at least intelligently, of their

effectiveness. Any course which omits these subjective impressions leads to academic rather than convincing knowledge, and tends to mislead.

When the exceedingly important subject is considered of occupations for amusement, rehabilitation or restitution, from amateur gardening to competitive sports, outdoor or indoor activities, likewise travel, exploration and the revivifying influences of radical changes of scene, circumstances, forms of life, from the canoe or pony trail to regions "far from the maddening crowd," from relative starvation, exhausting struggles with the adverse forces of the wilds to luxurious sailing on summer seas in a palatial yacht, or to "parlor car camping," he has experienced most of them enough to tell his tale from the vantage point of one who was there.

Not that he enjoyed wealth or leisure by any means; most of these larger and longer experiences occurred through acting as medical companion to patients of the late Weir Mitchell, although many came about through utilizing such lesser opportunities as came his way from early boyhood to late middle age. Thus it will be plain these recommendations have at least the merit of being made from actual familiarities with facts.

So, too, of the more onerous, painstaking but handsomely paying measures included under the caption: "Self Regulation." No man can speak the word in season with such power and purpose as one who himself has set the example of faithfully and constantly performing what he urges upon others. Far more acceptable authority resides in the phrase "come, do as I do, what I always regard as a pleasing task, either by carrying them out for my own good or through luring others to do with me while acting as their guide in conduct."

Take for example one measure he so uniformly and cordially commends which he claims goes so far in maintaining vigor and usefulness of the arms, legs and back. This is a regaining of power and proficiency in all the voluntary mechanisms *not* by laborious work, but by movements calculated to induce pliancy, elasticity, in muscles, ligaments and joints by acts to their full limit, in accord with design, through mobilization, stretching, torsion, to full excursus. Likewise attention is needed to "the great skin heart," by dry friction on rising and retiring, by thoroughly training the surface to endure "changes of the elements" from hot to cold, from wet to dry, from stillness to buffeting winds and exposure. Here we have practical methods of achieving not only plus control (actuation), but the far more important factor of minus control, balanced restraint (inhibition) which Savage asserts is the outstanding characteristic of senility. Old age is normal, senility may be premature, and is preventable.

All these measures may seem trite, even burdensome. Upon their right use, however, depends escape from susceptibility or the achievement of immunity to pains, aches, "rheumatics," "goutiness," or to modify the effects of just plain normal old age, with its moderate stiffnesses and sensitiveness. Yet a large percentage of over mature individuals are similarly afflicted and fail to realize that the worst deteriorations are preventable by simplest and easiest precautions.

Our Own Unsurpassed Spa.

State administration of Saratoga Springs is resulting in a rationalization of mineral hydrotherapy, which to most of us heretofore has savored somewhat of empiricism.

In addition to the general principles of hydro-

therapy one has to understand the rationale of the carbonic-acid-gas bath, as given at Saratoga, in order to prescribe intelligently for patients referred to that spa. Moreover, the internal use of the saline waters in gastric disorders, in accordance with the principles laid down by von Noorden, and of the alkaline waters in combating acidosis of all types, are elements of great importance in the remedial scheme of things at this health resort, which is destined to take a supreme place among the great spas of the world.

Saratoga reconstruction plans of a most ambitious sort are in process of realization, and it should interest the profession, and enlist its active co-operation, to know that the State Conservation Commission is making ethical obligations, as physicians would conceive them, its guiding principle. The policy adopted permits no commercial exploitation of the springs, and tolerates no extravagant claims for their therapeutic efficacy.

In view of the passing of the once famous Nauheim it behooves American physicians to realize that we have at Saratoga springs which in CO₂ content are greatly superior to those at the erstwhile German resort. The Saratoga effervescent bath restores cardiac integrity just as effectively as the Nauheim system, perhaps more so.

The Commission will soon take steps, under professional advisement, to set forth in terms of modern medical science what therapeutic effects may be derived from the Saratoga waters and the rationale of such effects.

Anesthesia a Physician's Job.

The profession presents some curious anomalies in its attitude toward the practice of medicine on the part of those not licensed to engage in the treatment of the seriously sick. On the one hand it initiates the prosecution of and bitterly reviles the gentry who attempt illicitly to deal with the ill, and on the other hand it permits, encourages and compels nurses systematically to administer anesthetics, although the law specifically prohibits such a practice except when directly and continuously supervised by a physician. Such direct and continuous supervision means just what the words express, and nothing less, and if a physician has to do this he might as well give the anesthetic himself. It would be a reduction to absurdity to have an experienced physician always at hand directly and continuously to supervise a nurse anesthetist, in the statute's sense, and not administer the anesthetic himself.

The only justification for the giving of an anesthetic by a nurse is an emergent or in some sense exceptional situation precluding the regular mode of procedure. Any other attitude on this question is indefensible.

The giving of anesthetics is undeniably a phase of the practice of medicine as defined by the law. Our authority for this position is Dr. James Taylor Lewis, counsel for the Medical Society of the State of New York.

The argument of certain distinguished surgeons that their nurse anesthetists have had a vast experience and are highly competent is an impudent one and might be made with equal justice if they had similarly trained their ward orderlies.

Why is the thing done in the first place? In our judgment, the answer is to be found in the insist-

ence of our friends the socialists that pretty nearly everything in life is explainable by their doctrine of economic impulse. The patient is charged for the service; it is a question of making more money for the institution or the operator than could be made if a physician were employed. Something besides the economic spur ought to govern professional men in their dealings with people who trust their lives to them.

"The nurse is clothed with authority, but when such is exerted beyond the field of duty belonging to a nurse it furnishes the groundwork for criticism and is the nucleus of discontent" (S. E. Earp, *Medical Record*, May 24, 1919). All honor to the nurse in her proper place, say we, but when we insist that she practise medicine are we not dishonoring her?

Then there is the ethical phase of the subject. Should not the Golden Rule settle the question? Is there any surgeon who, if he were to be operated upon, would not choose to be anesthetized by a physician?

A Shrewd Diagnosis.

In pleading for the democratization of our school system one of the editors of the *Dial* gives a very apt illustration to show how much democratization might be accomplished. He cites the operation of a modern hospital, with respect to the relations which exist between the medical staff and the lay trustees, as the model which the school system should follow.

At present the teachers in our public school system are not themselves charged with initiative in educational matters, but are mere pawns of the Board of Education, whereas in the conduct of a hospital all technical matters are left to the staff. In such circumstances the profession of teaching is bound to fall to a low plane, which accounts for many things which we have thought strange about the school system and its results. This state of affairs violates both democratic and pedagogic traditions.

Let us hope that nothing will ever upset the happy situation of our hospital staffs and that the pedagogues will win equal recognition, which they deserve.

The labor union which the teachers have formed should ultimately be able to force this issue to a sane conclusion. Here's to their success!

As the Pressure Grows.

The college professors and the doctors are organizing unions and affiliating with the labor groups, which is only another proof that the middle class, as we have hitherto known it, is being pressed down at all points into the next social stratum. When your interests become those of a particular social group you belong, practically, to that group. When, in order to survive for a while longer economically, you merge organically with your fellow workers, you have become flesh of one flesh and blood of one blood.

What is being done to bourgeois professions in Russia by force seems to be coming about here without the use of machine guns.

Here is food for cheerful thought, if not for extended expression.

In the disease called Capitalism we are witnessing agglutination phenomena. Two groups are coalescing.

It is to be hoped that healing will take place by lysis, rather than by crisis.

Annual Registration of Physicians.

The betterment of the personnel of the medical profession has been one of the prime factors in medical education during recent years. Proprietary schools have been almost entirely eliminated, medical courses have been lengthened and marked progress has been made in the scheme to furnish the public with medical men who, by education and experience, are best adapted to practice the healing art. There are, however, easily discoverable phases which should be eliminated and this holds particularly good in the medical practice act of many of our states.

There are in every commonwealth so-called physicians who have no legitimate right to practice medicine. We hear from time to time of men who are practicing on the certificates of dead men and who by other devious means have been enabled to pose as honest practitioners. To overcome this difficulty and to eradicate this class, the annual registration of physicians has been proposed and is being tried in at least two states.

Professor Francis W. Shepardson, late Dean of Men in the University of Chicago and the present Director of Registration and Education of Illinois, is putting forth strenuous efforts to have such a plan carried out in his state. He puts forth the arguments in a paper recently read before the Kankakee County Medical Society that annual registration would permit the Department to keep in touch with legal practitioners; aid in keeping a correct roster of addresses; discover cases of individuals using licenses of others who have died or have left the state, or from whom certificates may have been stolen or purchased, and further would enable the Department to better control those unethical practitioners whose actions bring discredit upon the profession.

Prof. Shepardson makes a very strong plea for the adoption of such a plan by his state. We are generally agreed that the public must be protected from illegal, unethical and criminal practitioners, and it seems reasonable to believe that if Prof. Shepardson's plan were carried out, the State Board would have much better opportunity to purge the profession of those people who have no place therein.

A small registration fee such as \$2.00 a year would give the State Board money to prosecute offenders and, as physicians are compelled to register annually in order to vote, we cannot see why their dignity would be lowered if they were to register annually for the practice of their profession.

The State of Virginia taxes all professional men and the little opposition to such a plan in the Old Dominion has long since disappeared.

The MEDICAL TIMES will be glad to have opinions from its interested subscribers on this subject.

On to Washington!

Dr. Lambert's presidential address at the seventieth annual session of the American Medical Association in June stamps him as a thinking executive whose name will grace the roster of the presidents of the national organization. His address is well worth reading. Its historic features are succinctly, yet comprehensively stated; the medical matters pertaining to the various wars in which the United States has been engaged, have been whipped into

literary shape without imposing needless and superfluous details upon the reader; the need for amplified powers to the medical arm of the fighting service is clearly proved by the example of experience; the innovations of the medical activities of the Red Cross are clearly related and are convincingly shown to have been helpful to the army medical corps; the need for national control of preventable diseases is set forth as being best able of accomplishment through the medium of a national department of health and the profession as well as the public will acclaim this suggestion and will rejoice when the day will have arrived that "The Secretary of Public Health" will be one of the President's cabinet.

The latter feature of Dr. Lambert's address constitutes the crux of the present medical situation in its relationship to the public. There are so many matters of importance: the bringing up of our children, seeking means to obviate physical defects, the prevention of disease, quarantine, rehabilitation of the industrially injured—in fact, as Dr. Lambert puts it, "the giving of health to the people as we now provide education"—that every energy should be exercised by the medical profession to organize their activities under a central control in order that orderly and effective procedures for these high purposes should be inaugurated.

To accomplish this there is urgent need of active, energetic men to outline and carry into effect the necessary propaganda. We know of no one better fitted by experience, by ability, by temperament and by love of public service than Dr. Lambert to lead such a cause. Here is a field for just such an executive as he to carry into effect the very views which he champions. Men like Franklin H. Martin, W. J. Mayo, George D. Stewart, John Baldy, Franklin E. Murphy, J. H. J. Upham, L. S. McMurtry, William Pepper, Frank Billings, Arthur Dean Bevans, and a score of others, at least one from each commonwealth, should be appointed to co-operate with him. A numerically small executive committee could be appointed from the main committee and work along the given lines should be begun forthwith.

The medical practitioner owes it to his profession to serve the public unflinchingly. He has ever done so, frequently without avail. The time is now ripe for accomplishment. Let there be no lagging, and let the slogan be: "On to Washington!"

"We Shall Not Sleep."

Some of the worst consequences of the war, from the psychiatric point of view, are yet to be met. We shall be wondering after awhile at the number of nervous and mental breakdowns. They will occur in the people of poor emotional and mental balance who have most "enjoyed," in the language of W. L. George, the late war. This means mostly women. The excitement long gone, nothing will remain but telepathic waves from the graves in France, and the psychic "tinnitus" will wear down poor natural resistance. Then there will be another kind of war—conflicting concepts in the minds of the afflicted as to the real significance of happenings in the recent past.

"We shall not sleep" is a famous line which will yet be applied, not to the soldier dead, but to those who "enjoyed" the war.

A fitting theme, this, for a sombre poet.

Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

Confidential Suggestion to Medical Authors.

(To be read by no others.)

Now that we have textbooks on occupational disease, industrial accidents, and other conditions resulting from social and economic factors, it would seem that the time is ripe for a treatise which will consider disease from a class standpoint. Thus we will have a section on the Diseases of the Proletariat, another on the Diseases of the Bourgeoisie, and another on the Diseases of the Unduly Rich. Certainly this would be as rational a manner of approach as many others encountered in the standard writings, and one exactly in line with present-day social differentiations.

While we have long recognized the fact that poverty breeds pre-eminently certain types of disease, and that certain physical degeneracies attend middle-class existence (we said existence—not life), and that wealth frequently incurs rather definite physical penalties, we have not made classifications accordingly.

Even the diseases that are common to all three classes are apt to vary in their manifestations according to the social and economic status of the afflicted ones. The arteriosclerosis of hard work and that of the rich man's toxemia certainly behave differently in point of duration, symptomatology and mode of termination.

There are books on the young, and books on the old, and books on the middle-aged.

Let us have a book on the pathetic ailments of the poor, on the interesting afflictions of the middle class, and on the punitive and retributive plagues of the plutocrats.

Such a book should be illustrated. We have always pictured the sick poor exhaustively, just because they were poor, as Chesterton might say. Our textbooks have not been fair. We must illustrate in our new type of textbook the bodily troubles of J. S., the well known clothier, those of J. P., the international financier, and those of R. T., the parasitic pimp.

It is so obvious that such a textbook would sell well and bring fame to its author that we have no doubt that, having thus outlined the idea, competition will be keen to get it out first.

A friend to whom we have read this screed makes the horrid suggestion that the authors might be deterred by the fear of contracting some rich man's ailment after publishing such a work, on the principle of not flying to ills that they wot not of.

There would, of course, be small sale for such a treatise in Russia.

We don't honestly wish to democratize our diseases. Perhaps the work suggested will help to keep the disease distribution apportioned as at present.

The present disease allotment helps to preserve, more than we are in the habit of thinking, existing class lines. The very fact that your child has trachoma; or tuberculosis, is a rough and ready means of classing you. The possession of a champagne liver classes you, too, in the same offhand manner.

We must have that textbook.

The Anchored Surgeons.

(From the Popular Mechanics Magazine.)

With the decks tilting to an angle of thirty-eight degrees, two surgeons on a troopship performed a delicate operation requiring two hours, thereby saving the life of an American soldier. The patient on the operating table was held in position by several sailors, while six more sailors anchored the surgeons firmly against the table.

Colonel Henry Clarke Coe, M.C.

The host of American friends of Henry Clarke Coe, late professor of gynecology in the University and Bellevue



Medical College, will be interested to know that he has been recently promoted to Colonel, Medical Corps, U. S. Army. Colonel Coe was the first civilian physician to be appointed a first lieutenant in the Medical Reserve Corps, this honor given him by his college classmate and life long friend, President Taft, in 1908.

Colonel Coe's connection with the Medical Reserve Corps is too well known to necessitate rehearsing it; suffice to say, he has been the outstanding figure in this organization since its inception.

Colonel Coe was commissioned a major at the outbreak of the war and shortly thereafter went abroad. He was at one time chief surgeon in England and after going to France occupied many very important positions. At this moment he is the presiding genius of one of the largest hospitals in France situated near Le Mans. Not long since THE MEDICAL TIMES received from Captain J. B. Schreiter, M. C., the history of Mobile Hospital No. 3 which was in existence from August 1st, 1908, to August 12th, 1919, and which did most brilliant work at Saint Mihiel, the Meuse and in the Argonne Forest. This little history is reproduced herewith, although it was published merely for the personnel of the hospital.

"The Commanding Officer arrived in Paris from Evacuation Hospital No. 1 on July 1, 1918, and at once began to take over the material from the French with the assistance of Capt. James Worcester, M. C., who had already been assigned to this unit. As soon as a camp was assigned at

the Polo Grounds, Bois de Boulogne, the trucks and camions were assembled there, Besonneau tents were erected and a complete inventory was made and compared with French lists. The following personnel were assigned from various sources during the succeeding weeks: Officers, 14; Nurses, 22; Enlisted Men, 98. It was necessary to obtain additional instruments and medical and surgical supplies from various depots in the A. E. F. which caused unavoidable delay in preparations for active service.

"During the Chateau Thierry drive, all the personnel except a few enlisted men were detached and were on active duty at Coulommiers, Chateau Thierry, and at American Red Cross Hospital No. 2. The nurses were not recalled until a week before the organization left for the front. The hospital left Paris for the Toul-Lorraine sector by train August 21, 1918 arriving on August 22, and was assigned to the first army, temporarily attached to evacuation Hospital No. 1. The tent hospital of two hundred beds was set up and a Besonneau tent was equipped for an operating room with eight tables, which was inspected by both the Chief Surgeon A. E. F., and former Surgeon General Gorgas, who were pleased with its appearance.

"The St. Mihiel offensive began Sept. 12, 1918 and between that date and Sept. 15, 2750 wounded passed through Evacuation Hospital No. 1 and Mobile Hospital No. 3, eight surgical teams working smoothly in eight hour shifts. Orders were received to move to Royamieux but these were rescinded and we were ordered to relieve Field Hospital No. 359, which was operating a hospital for medical cases in French barracks at Rosiere-en-Haye, eight kilometers south of Doullard. The Commanding Officer had previously inspected Doullard with a view to establishing a casualty clearing station there but decided that it was unsuitable, being under daily shell-fire. Wounded were received from the divisions holding the sector north of Thiaucourt and Pont-a-Mousson. From Sept. 24 to November 12, Mobile Hospital No. 3 exercised its true function at a C. C. S. handling only serious, non-transferrable surgical cases, all others being evacuated at once to Evacuation Hospital No. 1, six miles south. About two-hundred cases were handled during the first two weeks, the mortality being heavy as many patients died before they could be operated upon, the wounds being mostly from high-explosives (long-distance bombardment).

"Four tables were in use with six surgical teams. Enemy aeroplanes came over constantly but did not harm us nor did any shell fall within half a mile, in fact the site was an ideal one as would have been demonstrated had our troops advanced eastward beyond the position which they held at the time of the armistice. On the evening of October 9, fire started in the x-ray room and the hospital was destroyed in spite of all efforts to subdue it. There was no loss of life but all the instruments and much valuable material was destroyed. The tents were saved and by strenuous efforts lost articles were replaced and the hospital was ready for work in tents as originally planned. Many of the records were burned so that it is impossible to give exact data in regard to the number of wounded, operations and results.

"From November 12 to December 20, the hospital (now under the second army) remained at Rosieres ready to move to Germany but it was not needed there. On December 20, we moved back to Evacuation Hospital No. 1 and camped in tents until January 20, 1919, when we moved to Le Mans and were directed to proceed to Alencon, and operate as a camp hospital of two hundred beds, to serve the 37th Division, billeted in and near there. From February 7 to March 28, when that division moved to Brest, we handled three hundred surgical and medical cases, covering the area between Beaumont and Alencon. This area being abandoned, patients were evacuated to their units or to Camp Hospital No. 52, Le Mans, until the hospital was closed March 28, and moved to the forwarding camp, Le Mans, April 7, to maintain a five hundred bed camp hospital in this area.

"On April 11, Mobile Hospital No. 3 was made a "skeletonized unit" (one officer and two enlisted men) the remaining eight officers, fourteen nurses and eighty-four enlisted men being transferred to Camp Hospital No. 120, their present organization, after nine and one-half months of active service. There were many changes in the personnel as only six of the original officers, thirteen of the twenty-two nurses and sixty-five of the enlisted men remain. The

health of officers, nurses and enlisted men throughout was good, only two deaths occurring the time of service. Private George W. Campbell dying of meningitis while we were stationed at Rosieres-en-Haye and Miss Charlotte Schoneheit, A. N. C., of influenza while she was on detached service at Evacuation Hospital No. 1. It must be said of this hospital that its officers, nurses and men remembered that their first duty was the care and comfort of the patients, which we know was appreciated by the many letters received from gratified patients after leaving."

The medical officers who are interested in the Medical Reserve Corps are anticipating the return of Colonel Coe to this country. Many expressions have been heard that if the interests of the Corps are considered the War Department could do no better than to order Colonel Coe to Washington for the purpose of reorganizing the Medical Reserve Corps, the members of which have done such valiant work during the war.

Correspondence

THE WAY TO UTOPIA.

To the Editor of THE MEDICAL TIMES:

Natural history scientists tell us that the animal man, no matter of what type or where his origin, has equal capabilities.

The Declaration of Independence of the United States proclaims all men to be equal.

The French Republic cites equality of man as a positive claim.

The volunteers of the Northern army in the Civil War believed that slavery of the black man was contrary to the best interests of the nation.

Our participation in the war in Europe for the past two or more years has been sustained by the conviction of our people that Germany had a desire to subjugate the world on the theory that they were the superiors of all other peoples to which we could not assent. True democracy recognizes that as each individual comes into the world without any choice of parentage, each one should have equal opportunities for development and incentive to excel in whatever department of life his or her special qualifications may determine. We are trampled, however, with the custom of considering the possession of wealth as a claim to superiority, and grant unto its owners a power to which it is not entitled, leading many to adopt the notion, "Get money, honestly if you can, but get money," as a proper ambition. An ideal nation would have no entailed wealth, every child should be given equal opportunities. If parents are unfit from self-indulgence in alcohol, tobacco, or any other cause, then the child should be placed under proper conditions to enable him or her to develop faculties to the highest extent.

Superior wisdom or capacity for direction of affairs should be required of those who aspire to lead in public affairs.

Democracy cannot recognize class distinctions, such as aristocracy, bourgeois and proletariat, and should see to it that the less educated or laboring class (so called) should be given such compensation as to enable them to be self-respecting and capable of meeting their obligations. The medical profession in the past has been quite liberal in its efforts to bring about the greatest good of the greatest number and I hope will continue to do so.

Education should be practical, embracing the fundamental unskilled labor, belonging to the trade or profession selected, and all girls should serve as domestic help until they can pass a practical examination before being licensed to marry. Then with the admonition, "Do unto others as ye would they should do unto you," thoroughly grounded into the minds of all we may hope for contentment if not happiness.

A. HAZLEWOOD, M.D.

Plainwell, Mich.

Obstetrics and Gynecology

A Case of Successful Caesarean Section for Eclampsia.

E. W. G. Masterman reports a case of Caesarean section for eclampsia. A. R., aged 31, had enjoyed good health till her marriage. She had first a three months' miscarriage and in 1914 had an eight months' child, now living. In 1916, when pregnant for the third time, she had severe albuminuria with anasarca. She was delivered of an eight months child (which lived four months) at home and afterwards went to a maternity hospital for the kidney trouble. The disease cleared up. In 1917 she had another miscarriage (cause unknown) at three months. On June 3, 1918, she was admitted to the infirmary, seven months pregnant, with acute bronchitis and severe albuminuria and hematuria. Under treatment the bronchitis cleared up and the blood disappeared from the urine. When she insisted on discharging herself—against strong advice—on July 4th, there was only a trace of albumin in the urine.

The author saw no more of her until July 27th, when she was taken to the infirmary by ambulance in an acutely delirious condition with the history that she had had during the previous twenty-four hours twenty fits of eclampsia, as well as severe vomiting. Within four hours of admission she had four more typical eclamptic fits. The urine proved to be loaded with albumin; there was anasarca of the legs, and the patient's condition appeared to be urgent in the extreme. The temperature was 97°. Labor was not due for another month; the cervix felt hard, and the os only admitted two finger-tips. There seemed to be no labor pains. A careful examination failed to reveal any fatal heart sounds, and it was concluded the child was dead.

At 10.30 p. m. Masterman performed the operation in the usual way, by drawing the uterus outside the abdominal cavity before emptying it. On opening the uterus the child was found to be dead, with the head lying deeply in the pelvis, necessitating some little force in extraction. The placenta and membranes were removed, and the uterus was sewn up with one layer of deeply placed silk-worm-gut sutures and an outer layer of superficial catgut sutures to cover the scar. As the patient was clearly unfit for further pregnancies, we excised 1 inch of the inner part of each Fallopian tube and bound the proximal stumps in the uterine substance, covering the place over with peritoneal flaps. The abdominal wall was closed in layers in the usual way. The patient lost a very moderate amount of blood, and the whole operation took just over half an hour.

The result has been very satisfactory. The patient, who was comatose before the operation, was bright and intelligent the next morning. She knew nothing of what had happened, but was delighted to hear what had been done. The temperature reached was 100.4° that day, owing to a certain degree of bronchitis, but never reached 100° afterwards. Since the operation there have been no more fits, no vomiting, and no headache.—(*Int. Med. Jour.*, Sept. 28, 1918.)

Treatment in the Toxemias of Pregnancy.

Gilbert I. Strachan, of Glasgow, in this paper refers to the treatment of only the fully developed conditions—hyperemesis, albuminuria, eclampsia, and the like—but it must constantly be kept in mind that this is only second best, no matter how successful the result may be. Best of all is prevention. This view is becoming daily more generally accepted by the profession, and even by the lay public, and it is reasonable to expect a lesser incidence of these conditions in the future.

For various reasons, however, these cases are often not presented for treatment until the toxemia is fully developed, and then the most active measures are required to successfully combat the disease. Treatment must always rest on the basis that the woman is pregnant, and that therefore, if the pregnancy be ended, the origin of the toxemia will be removed. If the pregnancy is to be terminated, this must be done sufficiently early, and not put off until the patient be in danger of losing her life. In eclampsia sedatives are urgently indicated on account of the fits. On this all are agreed, but not on the individual sedative or dosage. Morphine, the most potent of these drugs, is probably the best if properly used, although Bumm and Jardine are averse to it; but Williams, Tweedy, Galabin, Eden, and especially Stroganoff, strongly recommend it. Galabin gave no more than 2 grains in twenty-four hours, while Tweedy administered it until the respirations came down to seven per minute. A satisfactory and safe routine is to give

¼ gr. or ½ gr. at first, to repeat, if necessary, the smaller dose in two hours, and, again if necessary, after another two hours, but not to give more than three doses unless some special indication be present. Usually a most satisfactory result will be obtained in this way. Chloroform is used by many, and in its proper place is certainly of much value. Its continued use over a lengthened period is much to be deprecated. There is no doubt as to its deleterious effects on the kidneys under these circumstances; but as an adjuvant to operative treatment it still remains unequalled.

Chloral hydrate and potassium bromide are of more use for the restlessness between fits than for actual convulsions. Stroganoff gives them alternately with morphine, and with this method a death-rate of only 6 per cent. is recorded.

Very different is paraldehyde, which almost always the author has found of much sedative value and absolutely safe. Two drachms given by the rectum, with repetition of half that dose every two hours when necessary, is usually equal to the largest dose of morphine in this respect, and without any of its contraindications.

But apart altogether from drugs, much attention must be given to the general surroundings of the patient. A single and complete examination should be made at first, and then the patient should be left alone as much as possible, as it is obvious that so strong a peripheral stimulus as a bimanual pelvic examination may very easily set up fresh fits.

In general terms, then, this side of treatment will resolve itself into the exclusion of every agent that can act unduly on the tactile, aural, visual, or other receptor systems, and this will include good nursing, a suitably warmed and darkened room, with constant and experienced attention. These conditions are obtained to best advantage in an upper class private house; they obviously cannot be obtained in the slums, while in hospital the bustle of a labor ward is not conducive to rest and peace.

In recent years sedative treatment has been perfected by Stroganoff of Petrograd. The patient is put to bed, the head of the bed being elevated, in a quiet and darkened room; chloroform is given lightly and only actually during fits; morphine and chloral and bromide are given alternatively as sedatives. The patient lies on one side for one hour and is then turned for another hour on to the other side so as to avoid pulmonary congestion, while the head is hung over the end of the bed so as to allow free escape of all mucus from the chest. The stomach and bowel are washed out under chloroform and the patient then left alone as much as possible.

With such treatment Stroganoff reports the remarkably low death-rate of 5 per cent. E. Roth, of Dresden, treated fifty cases in this way and reported 8 per cent. of deaths, as compared with 19 per cent. by other methods of treatment. The fetal mortality was 18.6 per cent., as against 5.5 per cent. by other methods. These figures would appear to speak strongly in favor of sedative expectancy.

On account of the frequent hemorrhages and the heightened blood pressure found in this condition circulatory sedatives are much used by some authorities. Zinke advocates veratrum viride; he gives 2 minims of the tincture subcutaneously and repeats it hourly until the pulse falls to 60. The injection is repeated on any rise of the pulse-rate above that. He reports a maternal death-rate of 15.38 per cent and a fetal death-rate of 53.38 per cent. In a series of cases not so treated he quotes death-rates of 34 and 45 per cent respectively; judging from this alone the treatment would seem to improve the mother's chances and to prejudice those of the fetus.

The drug is dangerous, however, and is better omitted. But in the other type of toxemia, manifested especially by such a condition as hyperemesis gravidarum, attention must be directed primarily to the gastro-intestinal tract, since it is here that the causative toxin acts most strongly and evidently. In these cases, first of all, and in spite of the sickness, the stomach should be washed out; some recommend that one drachm of magnesium sulphate in solution should be left in the stomach after the last washing, but this will usually be found to set up fresh vomiting; it should be omitted as a routine, and used only in the rare cases in which the stomach will tolerate anything. The bowel must next be thoroughly washed out, and, as far as possible, kept clear, as this channel may have to be used for feeding purposes.

As regards diet, it may be necessary to withhold nourishment of any sort for a day or two, but usually rectal alimentation will be borne quite satisfactorily. The mere peptonizing of milk can hardly now be considered a sufficient procedure. Short and Bywaters have pointed out, as the result of experiment, that proteins must be broken up, not merely to the peptone stage, but must be completely hydrolyzed to the amino-acid state before they can be absorbed by the bowel mucous

membrane. Prolonged action of the enzyme powder is therefore necessary. The same observers find glucose well absorbed by the rectum and colon, but not so other food radicles.

These considerations are important when we remember how essential is nourishment to such patients, and how quickly they emaciate; they may, in deed, in a very short time sink so low as to be beyond any treatment.

In this condition we must always from the very first, and no matter how the case may be, keep induction of labor in mind; the tendency is too often to leave it until every palliative drug and method has been found wanting, by which time the patient is often fatally ill, and the death is regarded as the result of the operation, whereas it is due really to the failure to operate the proper time.

Of drugs, the gastric sedatives—bismuth carbonate, tincture of opium, dilute hydrocyanic acid—have a most variable action; in some cases they are apparently without effect, while in others their action is quite magical; often, however, they appear merely to excite further vomiting. We cannot look to drugs for any real help in this disease. The gastric sedative most likely to prove effective is dilute hydrocyanic acid in 5 minim doses three times a day.

In all toxemias elimination of fluids so as to remove the circulating toxins is safe and rational treatment.

Washing out of stomach and bowel should be done in every case of toxemia in pregnancy: of purgatives (when they can be retained in hyperemesis) the hydragogues—magnesium sulphate 60 grains daily, or compound jalap powder 90 grains as required—are good, but for the reasons stated above we must rely mainly on enemata. Diaphoresis is of distinct benefit. The hot pack, or, when it can be obtained, the hot air bath, are both quite safe if the pulse be carefully watched.

As the toxins are circulating in the blood, it is reasonable to suppose that by blood-letting a certain amount of toxin will be removed, and that if in addition fluid (for example, saline) be introduced in place of the abstracted blood, the remaining toxins will be diluted, while the kidneys will be washed clean of accumulated metabolic debris and stimulated to normal excretion.

All these hopes have been realized in practice, and this line of treatment has been of much value. Jardine, the foremost in Great Britain in this direction, at first used sodium acetate, 40 grains to the point of water, the solution being at a temperature of 104° F. He selected this salt on account of its diuretic action, but he and others now use normal saline, and with equally good results.

Where venesection has been performed (15 to 20 fl. oz. may safely be removed in a case of average severity) saline, 2 to 3 pints, may be introduced into the vein at the same operation, and it will be found that the distended veins in eclampsia facilitate this procedure; very different is the case with the collapsed veins which accompany the severe prostration of hyperemesis.

In the less urgent cases the saline may be administered by the rectum, and with admirable results; saline may thus be administered continuously. Generalized edema is usually held to be a contraindication to transfusion, but in practice I have not found it so; however, if edema of the lungs be present, as evidenced by the presence of dullness and rales at the bases, it is better to withhold saline, as this edema may become aggravated and the patient be literally drowned in her own mucus.

The sudden and very temporary elevation of temperature sometimes seen after transfusion is usually of no moment practically; it has been attributed to the fluid used being a too high a temperature, but this explanation is quite insufficient to account for the great majority of cases. In general terms, the safe and logical obstetrical rule is to treat toxemic cases of slight and moderate severity by these described palliative measures at first, but if no improvement shows within twenty-four hours, and much more if the condition becomes worse in spite of treatment, we must empty the uterus. When this line of treatment has been decided on the sooner the operation is proceeded with the better for the patient. We must entirely disregard the period of gestation and the question of fetal viability and consider only the interests of the mother. In severe cases the uterus should be emptied at once.

In pernicious vomiting Williams, of Baltimore, lays stress on the ammonia coefficient of the urine, and urges that cases with a low coefficient are almost always hysterical, and should be treated as such, and induction of labor not performed. This is true as a generalization, but it must not be forgotten that such cases by prolonged starvation may develop a high ammonia coefficient. Again, cases of purely hysterical vomiting may die of inanition, and in such cases, everything else failing, induction of labor will be called for purely as treatment for the neurosis. These exceptions to the above rule must always be kept in mind.

As regards eclampsia, Bumm quotes Seitz, who reports a death rate of 6.5 per cent with early delivery, 17.2 per cent after later delivery, and 28.6 per cent with purely expectant treatment. Bumm himself found a death-rate of 20 per cent with expectant treatment, but since 1901 he has in every case delivered as soon as possible after the first fit, and now reports a mortality of 2 per cent—truly an altered figure. From a recent observation of almost forty cases of eclampsia strachan recommend the emptying of the uterus after the first fit.

The method used will be governed by several factors, especially the urgency of the case and whether or no parturition is proceeding. In hyperemesis, which usually occurs long before term and not at parturition, the insertion of a bougie between membranes and uterine wall will usually be sufficient, the process being then completed normally and usually quite rapidly. If the cervix be tight or the process slow, moderate and intermittent cervical dilatation will usually answer.

In eclampsia at term parturition usually has set in and may be left to be completed, or if thought fit forceps may be applied to speed the process. But if forceps are used no undue force must be employed or unnecessary speed obtained as a very severe perineal tear may result, which, as the patient is so likely to be a primipara, will very unfavorably influence her later obstetrical and gynecological history. But if dilatation be slow (perhaps owing to a tight cervix: and the eclamptic condition is becoming worse, operative cervical dilatation is called for. The best method is to make two or three incisions into the cervix, as Dührssen advises. This immediately produces full dilatation, and also allows a loss of blood, which is itself of benefit. The incisions should always be stitched up when the intrauterine manipulation is completed. Any necessary intrauterine manipulation may be at once proceeded with. When the cervix is fully dilated, if any operative interference be required version or forceps will usually answer the purpose; the former is especially indicated when speed is necessary—for example, when a fetal heart is heard.—(*Brit. M. J.*, Aug. 3, 1918.)

Diagnosis and Treatment

Gastric Ulcer.

Professor Chauffard points out the main lines of the treatment to be adopted. This is based upon milk diet. The first addition to milk should be rice boiled in water, for it is very nutritious and never gives rise to any pain, when it has been thoroughly cooked, so that the grains are burst open and well plumped out. Patients take it willingly, when they find that it causes no pain. Later, cooked semolina and the yolks of eggs may be added to the milk. These are borne very well as a rule, and form a curative agent of importance. Medicinally, bismuth is given for twenty days, in a dose of, at least 10 g. and at most 20 g. It should be taken in the morning before rising and when the stomach is empty, suspended in half a tumblerful of water. Relief is obtained in a very few days. For purely painful conditions recourse may be made to the solutions of bicarbonate of soda and phosphates, recommended by Roux of Lausanne, or to the large doses of citrate, phosphate, and sulphate of soda used by Chauffard himself.

In the case of hemorrhage, ice should be given, supplemented by ergotine or emetine, but Chauffard does not consider that emetine is so effectual as it is in hemoptysis, although it is borne very well. Operative treatment for hemorrhage is no longer in favor, but a gastro-enterostomy, carried out on the lines recommended by Roux, relieves pain and prevents relapses. It is now recognized, however, that the effect of an operation such as this, though usually very satisfactory, is simply palliative and not curative. Only complete removal of the ulcer will cure the complaint, but the percentage of results is still far too low for the operation to be undertaken except in the case of an ulcer giving rise to dangerous consequences.—(*Journ. des Praticiens*, June 1, 1918).

The Treatment of Acute Pulmonary Edema.

Charles Greene Cumston, of Geneva, formerly of Boston, observes that by the withdrawal of from 300 to 400 grammes of blood from the general circulation, tension is decreased in the domain of the pulmonary artery and at the same stroke gives aid to the right heart struggling against hypertension. Likewise, by subtracting from the general circulation a certain amount of toxic products it decreases the cardiac spasm, resulting from the accumulation in the body of these products;

and lastly, it protects those portions of the pulmonary parenchyma which are still in a normal condition against the serous inundation, by decreasing the afflux of blood which is obstructed in its flow in the involved areas.

Consequently, in a case of acute pulmonary edema one should perform venesection without delay. What is at the bottom of the condition of affairs is *asphyxia* and not *syncope*. In the vast majority of cases of acute pulmonary edema the letting of blood will immediately relieve. But in certain particularly serious instances of the process it is in itself not enough to accomplish its purpose, so that one must not overlook adjuvant medications which fulfil particular indications.

For the very redoubtable bronchoplegia, hypoderimics of strychnin are indicated. Electrization of the pneumogastrics has been known to give good results. In order to combat disturbances of innervation, the existing periaortitis should be attended to by cauterization over the sternocostal area or by wet-cupping over this region.

Rectal administration of carbonic acid was successfully resorted to in one case by Teissier of Lyons, and the recovery of the patient may very well have been due to the action of the gas on the respiratory center, and also by increasing the pulmonary ventilation. The gas kept up hematoxis sufficiently for the patient to pull through the attack.

Puncture of the right auricle in the fourth right intercostal space with a long, fine needle has been done with the aim to rapidly deplete the excessive distention of the right heart. This procedure has been successfully resorted to by several writers and certainly merits attention.

Aspiration through a catheter introduced through a tracheotomy incision has been done, thus removing the liquid obstructing the respiratory field.

Acute pulmonary edema most commonly occurs in arteriosclerotic subjects to whom iodine in some form is being exhibited, and even in very small daily doses this drug has been known to be an accomplice in the production of this pulmonary process.

A number of years ago the writer was consulted by a gentleman of sixty-seven years of age, who was just beginning catheter life. He was desirous to have his prostate removed, but on the whole was a very poor surgical risk. He was 5 feet 7 inches tall, weighed 207 pounds, and offered an arterial tension of 23. However, he was told that if the tension could be brought down to 19 and his body weight reduced to 165 pounds the writer would attempt the suprapubic operation.

The patient was therefore placed upon a proper diet, ordered thios'namin, 5 centigrammes in a pill to be taken after breakfast and one globule of iodine (Astier) after lunch and dinner for *twenty days each month*.

As a result of the treatment the patient lost 46 pounds in six months and the arterial tension was reduced to 18.5, so that, it was decided to operate. However, two days before the operation the patient suddenly developed acute pulmonary edema and weathered the storm after the removal of 350 Cc. of blood. He lived for some two years afterward, but of course in possession of his prostate.

It is to be noted that in this case repeated analysis of the urine never revealed the slightest evidence of any marked renal change, and that the heart-sounds were perfectly normal. Therefore, it would seem as if the iodine might be responsible for the pulmonary upset.

As a prophylactic measure, after a patient has been the subject of an attack of acute pulmonary edema, a milk diet should be continued for some time, and if necessary from 1 to 3 grammes of theobromin may be given in twenty-four hours. This treatment fulfils two important indications in the lesion under consideration, namely, the elimination of the toxins and a reduction of the arterial hypertension.

It goes without saying that the casual affection must be attended to, such as nephritis, aortitis, rheumatism, etc., but great care must be exercised in handling medicaments capable of provoking acute edema of the lungs.

Acute pulmonary edema occurring during pregnancy offers two therapeutic indications, namely, that directed to the respiratory and circulatory systems and that of the pregnant uterus. Therefore, every pregnant woman who is a cardiopath and who presents the slightest trace of albumin should be instantly put on a strict milk diet. If the edema develops, blood should instantly be let, the quantity removed being *proportional to the intensity of the dyspnea and not the supposed resistance of the patient*.

If the pregnancy has reached the seventh month it is quite possible to have a living child. The writer is of the opinion that

If the patient recovers the uterus must be emptied, and if in proper hands, the Cæsarian operation should be seriously considered.—(*Ther. Gaz.* No. 8, 1918).

Diarrhea in Graves' Disease.

As a symptom of well-established exophthalmic goitre, diarrhea is, of course, a common phenomenon. Brown reports a small group of cases in which for a considerable period of time, in two of the cases, for more than a year, the diarrhea represented the only symptom of the disease. These cases subsequently developed all the classical symptoms of Graves' disease, and we feel, therefore, that it is almost certain that the diarrhea was not an accidental occurrence, but represented the only striking early symptom of the disease in this group of cases. In all these cases there was gastric achylia, but this is obviously of no special moment, as practically all cases of the opposite condition—myxedema—also show achylia, and yet in these cases constipation is the rule; also hydrochloric acid therapy alone is, as a rule, ineffective in these cases. Therefore, there is probably a large element of thyrotoxic disturbance of nerve impulses as the prime cause, very similar to that seen, for instance, in the usual tachycardia of these cases, though whether this is vagal stimulation or splanchnic inhibition one cannot say. There is also possibly some functional pancreatic disturbance, though in our series this seemed to have played but a small role, as the most thorough examination of the stool showed no disturbance in fat digestion. These cases are interesting in drawing attention to the fact that for a long period of time intractable diarrhea may be the only symptom of Graves' disease, and unquestionably a considerable proportion of the cases of so-called nervous diarrhea falls in this category, although some few possibly may be due to disturbance of adrenal function.—(*Med. & Surg.*)

The Physician's Library

Sex and Sex Worship: By O. A. Wall, M.D.; 625 pages, price \$7.50. St. Louis: C. V. Mosby Co., 1919.

We are beginning to understand more and more that symbolism plays an effective part in the lives of people. Students have long been aware of the fact that the phallus and yoni were symbols which had to do with the worship of the peoples of the pre-Christian age. Prof. Wall has gone into the subject very deeply and as a result has brought out a comprehensive work showing the influence of sex on human development, particularly as it has to do with the development of arts, sciences and religion.

A study of this book will reveal to the deep thinker many things which heretofore have been obscure in his mind or entirely hidden. The book is commended to students as one worthy of serious consideration and they will find it the most complete work of its kind in the English language.

The Blind: By Harry Best, Ph.D.; 763 pages, price \$4.00. New York: The MacMillan Co., 1919.

This is a study of the condition of the blind and the work that is being done for them in this country. It takes up blindness and the possibility of prevention; provision for the education of blind children; intellectual provision for the adult blind; material provision for the blind, and the organizations interested in these unfortunate people.

The book is dedicated to "those bearing the heaviest of human sorrows but in whose souls their shineth an everlasting light and those who labor for them with infinite courage and faithfulness."

Of all the unfortunates in the world, those to whom the light of heaven is shut out are most to be pitied. This book will stir the interest of all people in the blind and should be read by every one who can in any way give assistance to these unhappy people.

The Operations of Obstetrics: By Frederick E. Leavitt, M.D., late of the University of Minnesota; 466 pages, price \$6.00. St. Louis: C. V. Mosby Co., 1919.

The author presents, assisted by many very useful and comprehensive illustrations, the operative side of obstetrics. The book is intended more for the general practitioner who must do some surgery than for the specialist. In a simple and easy method of elucidation, the author sets forth all the operative conditions with which the physician practicing midwifery may be confronted, resulting in a book of practical value which we commend to the profession.